THE

# AMERICAN JOURNAL OF PHARMACY.

NOVEMBER, 1869.

## MINUTES OF THE SEVENTEENTH ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, HELD AT CHICAGO, Sept., 1868.

The Seventeenth Annual Meeting of the American Pharmaceutical Association met in the Hall of Lombard Block, in the City of Chicago, on the 7th day of September, at 3 o'clock, P. M.

In the absence of the President, Prof. Parrish, the meeting was called to order by Vice President Ferris Bringhurst, Prof. J. M. Maisch, Permanent Secretary, officiating.

The Chair appointed the following committee on credentials of delegates: E. H. Sargent, of Chicago, Henry Haviland, of New York, and James T. Shinn, of Philadelphia. After examining the papers submitted the Committee reported the following delegations:—

*From the Massachusetts College of Pharmacy.*—Samuel M. Colcord, Ashel Boyden, George F. H. Markoe, Isaac T. Campbell and S. A. D. Sheppard.

*From the New York College of Pharmacy.*—P. W. Bedford, Isaac Coddington, William Neergaard, A. W. Weissmann and William Wright, Jr.

*From the Philadelphia College of Pharmacy.*—James T. Shinn, S. Mason McCollin, Wilson H. Pile, M.D., William Procter, Jr. and Alfred B. Taylor.

*From the Cincinnati College of Pharmacy.*—R. T. Miller, George B. McPherson, William H. Adderly, William J. M. Gordon and William S. Merrell.

*From the St. Louis College of Pharmacy.*—William H. Crawford, J. C. Kirkbride, Francis H. Crawley, Ferdinand W. Sennewald, James McBride.

*From the Kansas College of Pharmacy.*—H. S. Greene, Augustus Breunert, Robert Parham, George Leis, Robert J. Brown.

*From the Chicago College of Pharmacy.*—Albert E. Ebert, Frederick Mahla, Ph.D., James W. Mill, George M. Hambright, Thomas Whitfield.

*From the Saginaw Valley Pharmaceutical Association.*—William Moll, L. Simoneau, Samuel S. Garrigues, Ph.D., J. E. Taylor and J. F. Street.

*From the Alumni Association of the Philadelphia College of Pharmacy.*—William C. Bakes, Edward C. Jones, William H. Raser, Richard H. Shoemaker and Charles L. Jefferson.

The Chairman of the Executive Committee reported the following list of applicants for membership, they being duly recommended in accordance with the Constitution:

James W. Blake, Visalia, Cal.
Thomas J. Greatrex, San Francisco, Cal.
William A. Perkins, San Francisco, Cal.
James Topley, Vallejo, Cal.
Joseph S. Fitzgerald, Washington, D. C.
Rich'd G. Mauss, Washingt'n, D.C.
Weller Rothrock, Washing'n, D.C.
Charles L. R. Sayre, Washington, D. C.
Calvin J. Fiske, Chicago, Ill.
Charles H. Fitch, " "
H. D. Garrison, " "
Henry W. Heuermann, Chicago, Ill.
A. C. Ingalls, Waukegan, Ill.
Thomas N. Jamieson, Chicago, Ill.
Newton A. Johnson, Galesburg, Ill.
C. S. Jones, Chicago, Ill.
A. F. Murray, " "
T. H. Patterson, " "
David G. Plummer, Bradford, Ill.
Peter J. Singer, Peoria, Ill.
Albert A. Smith, Chicago, Ill.
Rob't Thompson, Bloomington, Ill.
A. C. Vanderburgh, Chicago, Ill.
James H. Wilson, " "
Henry Schrader, Lafayette, Ind.
Chas. H. Bennett, St. Paul Junction, Iowa.
Nathan W. Hunt, Des Moines, Iowa.
Joseph W. Harrop, Leavenworth, Kansas.
Joseph T. Brown, Jr., Boston, Mass.
William F. Horton, " "
George R. James, Schoolcraft, Mich.
Henry Melchers, East Saginaw, Mich.
Samuel H. Wagener, Muskegon, Mich.
Geo H. Savery, Minneapolis, Min.
Lucius E. Connor, St. Louis, Mo.
G. Mallinckrodt, " "
O. G. Sherman, M. D. " "
Justin Steer, " "
Charles M. Jones, Great Falls, N.H.

Geo. W. Jacques, S. Amboy, N. J.
Henry M. Billings, New York, N. Y.
Henry G. Boyd, Westchester, N.Y.
Benjamin Davis, New York, "
Hampden Osborne, " "
M. L. M. Peixotto, " "
William H. Rogers, Middletown, N. Y.
George J. Wenck, New York, N.Y.
George Wright, " "
Alexande B. Allen, Xenia, Ohio.
H. C. Gaylord, Cleveland, "
Frank Harrington, Logan, "
Louis A. Bates, Philadelphia, Pa.
Henry K. Bowman, " "
Henry C. Eddy, Philadelphia, Pa.
Peter P. Fox, " "
James S. Robinson, " "
Mitchell G. Rosengarten, " "
John Birch, Pittsburg, Pa.
George W. Kennedy, Pottsville, Pa.
Herman C. Nick, Erie, Pa.
H. C. Porter, Towanda, "
Jacob H. Stein, Lebanon, Pa.
Benjamin Lillard, Nashville, Tenn.
Edward S. Curran, Fond du Lac, Wis.
Osma J. Griggs, Tomah, Wis.
Alfred Senier, Mazomanie, "
Edward M. Wright, Prairie du Chien, Wis.

The Chair appointed Messrs. Edward C. Jones, of Philadelphia and Charles F. Fish, of Saratoga, tellers, who reported the unanimous election of the candidates.

The Secretary then called the roll, when the members present answered to their names, numbering 130.

The Chair having called for the Reports of Committees, the following were read by title and laid on the table for future action, viz.:

Report of the Executive Committee, with that of the Permanent Secretary,
" " " Committee on the Progress of Pharmacy.
" " " Committee on Queries.
" " " Business Committee.
" " " Committee on a Law to regulate the Practice of Pharmacy.

The Committee on Unofficinal Formulas reported progress, and desired to be continued for another year.

No report was received from the Committee on the Drug Market.

The report of the Executive Committee was now read by its Chairman, T. S. Wiegand, and that of the Permanent Secretary by that officer, and are as follows:—

The Executive Committee respectfully report that in the early part of the year they had published and distributed the 16th

volume of the Proceedings of our Association. The delay attendant upon its issue was greater than usual, although every effort in the power of the Committee was made to prevent it; the great variety and amount of matter has increased the size and cost of the book very considerably, the total expenditure on its account being nearly 1750 dollars. There has been received a number of applications for membership, which have been filed, and will be reported at the proper time; it is desirable that all desirous of joining our association should be informed that they are not entitled to any of the rights of members until they have perfected their membership by paying all their dues as well as signing the Constitution.

The only deaths that have come to the knowledge of the Committee are as follows:—

*Henry E. Hill*, who for several years past had been doing a fair business in Detroit, died on the 19th of November, 1868, from a pistol shot inflicted by himself whilst laboring under mental depression occasioned by his pecuniary reverses.

*Louis M. Emmanuel, M. D.*, who died on Dec. 27th, 1868, in the 34th year of his age, of pleuro-pneumonia, having previously suffered from diabetes. He was regularly educated as a druggist, having graduated at the Philadelphia College of Pharmacy. Having studied medicine, he served in various positions in the Medical Department of the U. S. Army, till mustered out of the service, shortly after which he settled down in practice of medicine with his father, at Linwood. He became a member of our Association in 1857, and he is spoken of by his friends as being of an affectionate disposition and sincere in his friendships.

*Edwin R. Smith*, of Monmouth, Illinois, who has been a member of our Association since 1862, died of a pulmonary affection, under which he had been suffering for some years; he was a graduate of the Philadelphia College of Pharmacy.

A great deal of the interest of the report of our proceedings is due to the intelligent attention of Mr. Slade, who has reported for us for four successive years, each year with increasing advantage to the Association, and the Committee feel it their duty to make this acknowledgment.

Having on former occasions referred to the difficulties under

which our Association labors in consequence of its financial embarrassment, it is again noticed with the hope that some plan may be adopted which will enable those charged with the expenditure of its funds to meet the obligations assumed by our Association promptly; this matter will be so fully explained by the Treasurer that further remarks are unnecessary.

The Permanent Secretary reports the reasons for delay in publication of the 16th volume, and hopes the arrangements made in advance will enable him to present the 17th volume at an earlier day.

Fifteen resignations were published last year, and 21 members dropped from the roll who have neglected the payment of dues. The entire stock of proceedings and exchanges are deposited in a room of the new building of the Philadelphia College of Pharmacy, and is insured at the sum of $2500.

The incidental expenses of the Permanent Secretary during the past year are itemed as follows: Postage stamps $128.37; freight $111.00; boxes $7·05; paper, twine, nails, etc., $4.50; porterage $3.00; circulars $11·50; insurance $15.00; engrossing and filling certificates $28.00; other expenses $5.45; in all $313.87.

The diplomas for the gentlemen elected honorary members of this Association at the last meeting were promptly forwarded by mail. Letters of acknowledgement have been received by the Secretary from all but three.

The report concludes with a list of the stock of Proceedings on hand, and the remark that the volumes for 1854 and 1856 are out of print.

The Permanent Secretary laid before the Association the letters of acknowledgement received from the honorary members elected at last meeting; also one from Professor Dr. G. C. Ehrenberg, of Berlin, addressed to the President, in reply to the address congratulating him on the 50th Anniversary of his Doctorate.

Pending the appointment of the Nominating Committee, the Chairman expressed his pleasure in having learned from the report of the Committee on Credentials, of the presence of delegates from two new Associations—the Kansas College of Pharmacy

and the Saginaw Valley Pharmaceutical Association. He extended to them a cordial welcome.

The following names were then given to act as the Committee on Nominations:

From the Chicago College of Pharmacy, Thomas Whitfield.
" Massachusetts " " Samuel M. Colcord.
" New York, " " William Wright, Jr.
" Philadelphia, " " William Procter, Jr.
" Cincinnati, " " George B. McPherson.
" Kansas, " " George Leis.
" Saginaw Valley Association, Samuel S. Garrigues.
" Alumni Association, P.C.P., William C. Bakes.
" Association at large, by the President, William H. Shuey, of Minneapolis; Charles H. Dalrymple, of Morristown, N. J., and N. Gray Bartlett, of Keokuk, Iowa.

The delegation from St. Louis College of Pharmacy not having arrived, it was ordered that its first delegate arriving be placed on the Committee.

The credentials of the delegates from the Maryland College not having been received, E. Walton Russell, one of them, was appointed to represent that College on the Nominating Committee.

Alfred B. Taylor, Chairman of the Business Committee, read his report, of which the following is an outline:

The Committee were charged last year to prepare rules of order for the transaction of business, and on considering the subject it was found that the wants of the Association were well met in a little volume called "Rules of Order—a manual for conducting business, etc., by B. Matthias, A.M.; Phila., 1869," which it is believed contains all the regulations, rules, and explanations necessary for our guidance, and a copy is herewith submitted.

The report recommends enlarging the duties of the Committee on Scientific Queries, and changing its name to "Committee on Scientific Papers and Queries," and that the duty of this Committee shall be to receive all reports of Standing Committees and all Scientific Papers intended for the Association, to designate which shall be read at length and which by title only, and prepare or have prepared synopses of such others as

it may deem desirable; and also to arrange in connection with the Business Committee the time for their being read.

The report also presents suggestions in separate form of a remodeling of the Constitution, and recommends, to save time, that the whole be referred to a committee to report to this meeting whether or not the suggestions shall be entertained.

It being agreed to refer the recommendations of this report to a Committee, the Chair appointed Henry Haviland, of New York, Ashel Boyden, of Boston, and W. J. M. Gordon, of Cincinnati, to that duty.

William Wright, Jr., Chairman of the Committee preparing a law to regulate the practice of Pharmacy, reported verbally that the duty had been attended to, and printed copies of the proposed law were on the table for distribution to the members for consideration and criticism prior to its being taken up by the Association.

The Permanent Secretary read a letter from Mr. Gellatly, Chairman of the Committee on the Drug Market, explaining the causes of failure in presenting a report, offering to furnish the usual statistics in time for publication, and suggesting the appointment of a Committee on the Tariff.

The report of the Committee on the Pharmacopœia was now called up. The Chairman, Dr. E. R. Squibb, of Brooklyn, explained that his was an individual report, it having been understood that each member of the Committee would make a separate report, and that the report offered by him he alone was responsible for. Dr. Squibb then read the first part of his report on the Pharmacopœia, a document of 80 cap pages of MS.

Mr. Bedford, moved that when we adjourn we adjourn to meet to-morrow morning at 9 o'clock, which was carried.

The Chairman then proceeded to read the address of the retiring President, Edward Parrish.

The address, for which we have not space, expresses regret at the inability of the President to meet his fellow members in the great and growing metropolis of the North-west. The embarrassed financial condition of the Association is referred to the too tardy payment of dues by members. The valuable services of the Permanent Secretary are alluded to in terms justly complimentary to that excellent officer. The 16th volume of Proceedings is spoken of with approval. The Reports on

the Progress of Pharmacy and the Pharmacopœia were noticed, and in regard to the latter, the president urges that the report as embraced in the next volume of Proceedings be tendered to the National Convention of 1870, and says, "It seems appropriate also that some action should be taken at the present meeting, encouraging all the incorporated Colleges of Pharmacy to participate in the Convention and declare our fealty and our determination to aid in the maintenance of the National Standard. If to this could be added an expression of sentiment, such as would come with peculiar fitness from a meeting convened in the North Western Metropolis, favorable to the widening of the scope of the Pharmacopœia so as in itself to meet more completely the manifold wants of the pharmacist, it might have an influence with the highly conservative and eminently scientific gentlemen to whom the final revision will probably be entrusted. There is a growing need for authoritative standards for a large number of popular remedies, which, while they remain outside the pale of officinal preparations, tend to weaken the value attached to the Pharmacopœia by practical business men."

The subject of the tariff occupies several pages of the address, which advocates the appointment of a Committee to use its efforts to effect a reduction of the high duties on drugs in general, as a measure important to the interest of the community and not detrimental to the revenue.

The proposed draft of a law to regulate Pharmacy is advocated as embodying principles calculated to elevate and advance our profession, and to remedy many of the evils arising out of want of education and training. The president believes it will favor local organization, which he advocates as desirable in every district where members justify it. The report concludes with the statement that John Faber was duly authorized to attend the Congress at Vienna, as the representative of the Association.

The suggestions of the President's address were referred, at the suggestion of the Business Committee, to a special Committee, to which duty the Chairman appointed James T. Shinn, of Phila., Edward L. Milhau, of New York, and Dr. F. Mahla, of Chicago.

The meeting then adjourned.

*Second Session—Wednesday Morning, Sept. 8th.*

The Association convened pursuant to adjournment, at 9 o'clock, A. M., Vice-President Bringhurst in the Chair.

The minutes of the first session were read and approved.

The Business Committee offered the following, which was adopted:

"*Resolved*, that the faculty of Rush Medical College and of the Chicago Medical College and the Medical Profession at large, be invited to be present at our sittings.

Mr. Charles A. Tufts, Treasurer, read his Report for the past year, of which the following is an abstract:

The Treasurer reports that all the bills coming to his knowledge due by the Association, have been paid, and there is a balance due the treasurer of $29.63. There are 765 members names on his books; of these 607 are permanent contributing members. The remainder, consisting of life members who have contributed ten years and decline to resign it, and those who will be life-members after a few years, more or less. The circulars in reference to the relinquishment of life-membership, directed by the Association to be sent to its members in 1867, have been sent to every member; 463 relinquished the right, 91 declined, and 18, whilst declining to relinquish the right, will continue to contribute till further orders. 110 members did not reply to the circular, though sent several times, and the Treasurer has been put to much inconvenience and loss of time by this default, which is partly due, no doubt, to change of residence and other causes preventing the receipt of the notices. The expenses of the Association have greatly increased, as will be seen by the following:

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| In 1866, | Proceedings cost | $1038.15, | general expense | $552.45. |
| In 1867, | " | " | 1508.32, | " | " | 552.45. |
| In 1868, | " | " | 1724.47, | " | " | 1065,46. |

The great increase in 1868 of the general expenses is due to accommodations for the Proceedings at the Hall of the Philadelphia College of Pharmacy, and freight to the State Libraries, which will not be incurred another year. The cost of the volume for 1868 is $2.50, and our dues are $3.00 per each member, which leaves but a small margin for the necessary expenses of the Association, hence it is very desirable that members should be prompt in paying their dues to avoid embarrassing the finances of the Association.

The Treasurer tenders his thanks to those members who have kindly assisted him during the past year.

On motion of the Business Committee, the report was accepted, and it was referred to an auditing committee appointed by the Chair, consisting of Messrs. Boyden, Bedford and Brown.

Prof. Procter, on behalf of the Nominating Committee, presented the following report of nominations for the ensuing year:—

*For President,*

E. H. SARGENT, . . . . Chicago, Ill.

*For Vice-Presidents,*

FERDINAND W. SENNEWALD, . . St. Louis, Mo.
JOHN H. POPE, . . . . New Orleans, La.
JOEL S. ORNE, . . . . Cambridgeport, Mass.

*For Treasurer,*

CHARLES A. TUFTS, . . . Dover, N. H.

*Permanent Secretary,*

JOHN M. MAISCH, . . . . Philadelphia, Pa.

*Local Secretary,*

PROF. J. FARIS MOORE, of Baltimore, [elected at last sitting.]

*Executive Committee,*

THOMAS S. WIEGAND, Chairman, Philadelphia, Pa.
WILLIAM WRIGHT, JR., . . . New York, N. Y.
WILLIAM C. BAKES, . . . Philadelphia, Pa.
SAMUEL M. COLCORD, . . . Boston, Mass.
JOHN M. MAISCH, *Ex-officio*, . . Philadelphia, Pa.

*Committee on the Progress of Pharmacy,*

F. MAHLA, Chairman, Chicago, Ill.
S. S. GARRIGUES, Ph.D., . . . East Saginaw, Mich.
G. F. H. MARKOE, . . . . Boston, Mass.
EDWARD L. MILHAU, . . . New York, N. Y.
PROF. J. FARIS MOORE, *ex-officio*, . Baltimore, Md.

*Committee on the Drug Market,*

HENRY W. FULLER, Chairman, Chicago, Ill.
WILLIAM WRIGHT, JR., . . . New York, N. Y.
THEODORE O. KALB, . . . St. Louis, Mo.
JOHN J. THOMSEN, . . . . Baltimore, Md.
EDWARD S. WAYNE, . . . Cincinnati, O.

*Committee on Queries,*

ALBERT E. EBERT, Chairman, Chicago, Ill.
ISRAEL J. GRAHAME, . . . Philadelphia, Pa.
N. GRAY BARTLETT, . . . . Keokuk, Iowa.

*Business Committee,*

ALFRED B. TAYLOR, . . . . Philadelphia, Pa.
E. WALTON RUSSELL, . . . Baltimore, Md.
CHARLES H. DALRYMPLE, . . Morristown, N. J.

The Secretary announced the arrival and presence of the delegation from the St. Louis College of Pharmacy.

A ballot being ordered for President, the Chair appointed Edward C. Jones, of Philadelphia, and Charles F. Fish, of Saratoga, tellers, who reported the unanimous election of Mr. Sargent for President for the ensuing year. The remainder of the ticket was then voted for, and the tellers reported the election of all the candidates.

The Chairman appointed William Procter, Jr., and William J. M. Gordon, a committee to conduct the President elect to the chair. Mr. Bringhurst then said, I have the pleasure of introducing to the Association, the new President, Mr. E. H. Sargent, of Chicago, when the President spoke as follows:

"I am unable to express the sensations which crowd upon me as I realize the position in which your kindness has placed me. Occupying this chair, made honorable by the eminent men who have preceded me, I trust the influence of their example will enable me to fill it without disgrace to the Association. I thank you for the great and undeserved honor you have conferred upon me, yet I have a painful sense of inability to discharge its high duties satisfactorily, even to myself. Unused as I am to parliamentary forms, and seeing around me those who have made illustrious their efforts to build up this Association, I can but fear that you have erred in your choice of a presiding officer, yet I shall rely upon the evidence of your kindness that you will aid me in properly discharging the duties of the office, promising my best efforts. I am happy to extend to you, in the name of the Chicago College of Pharmacy, and of the druggists of this city, a hearty welcome. We will do what we can to make your stay pleasant, and we hope this meeting may result in extendtending still further the benefits and usefulness of our honored Association. As this is your first meeting in the central portion of the Continent, we wish to remind you that the Great West lies beyond us, toward the setting sun, that it deserves your consideration, and we hope at no distant day will be favored by your presence. The older Eastern States have heretofore claimed the Annual Meetings as of right, to which we in future protest in good nature. The Young Giant "out West" is nearly of age, but is still growing, and will hereafter claim his full share of these privileges. We have at this meeting a much larger exhibition of articles from Europe than is usual, owing to the untiring efforts of your Local Secretary. It seems very desirable that such exhibitions of goods, not less than those of home production, should be encouraged, as thereby the interest of the meetings will be greatly enhanced and much useful information be acquired. To meet a large portion of the expenses of such exhibitions it will only be necessary to allow the articles exhibi-

ted to be sold at the meetings, which seems unobjectionable, and if generally known must increase such contributions very largely. We thank you for coming here, and hope that we may be soon again honored by your presence. When you leave us we trust that you will carry with you none but pleasant memories of this re-union and of your friends in Chicago."

The report of the Committee on the Progress of Pharmacy being called up, the Chairman, Dr. Fr. Hoffmann, read portions of the same. On motion, the report was accepted and referred to the Executive Committee for publication, and the suggestions contained therein to the Business Committee for consideration and report at a future sitting.

The President, at the suggestion of the Business Committee, appointed the following members as a committee to examine the specimens on exhibition, and report to a future session, viz., Thomas Whitfield, of Chicago, Paul Balluf, of New York, N. Gray Bartlett, of Keokuk, William H. Crawford, of St. Louis, and Henry J. Menninger, of Newbern, N. Carolina.

The consideration of the report of the Committee appointed to draft a Law relative to Pharmacy was, on motion, made the special order for to-morrow morning.

It was recommended that the various features of the law be privately discussed by the members, that all might be prepared to vote on the subject without much loss of time.

It was resolved, owing to the absence of many members in the exhibition room, that the doors of that room be closed during the sessions of the Association.

Dr. Squibb exhibited the specific gravity bottle alluded to in his report on the Pharmacopœia, and explained its construction and use. An accurate thermometer is suspended in the bottle, which through the stopper connects with a tube containing a scale correcting the capacity for different temperatures. In this way the bottle may be filled at any convenient temperature, and the specific gravity taken at the temperature of the room, while by rotating the bottle the thermometer will act as a stirrer and prevent stratification of the liquid. The capacity of the bottle was a litre, or about a quart. The inaccuracies of thermometers were also dwelled upon by the speaker.

Dr. Squibb finished the reading of his report on the Pharmacopœia, which, on motion, was referred for publication.

The Secretary now read the following list of delegates from the Maryland College of Pharmacy to this meeting: J. Faris Moore, John F. Hancock, E. Walton Russell, N. Hynson Jennings, and Henry A. Elliott.

The Secretary also read a communication from the Metropolitan Glee Club, of Chicago, inviting the members of the Association to participate in their excursion to St. Josephs, Mich., on Saturday next, Sept. 11th, on the steamer Orion. The communication was accepted, and the Secretary directed to return the thanks of the Association for the invitation.

The Auditing Committee reported that the Treasurer's account had been found entirely correct, and complimented that officer for the neatness and accuracy of his books, and for the interest he manifests in the finances of the Association.

On motion of the Business Committee, it was

*Resolved*, That a committee of three be appointed to take in consideration the time and place of our Annual Meeting; that all invitations be referred to them, and that they report the time and place, subject to the decision of the meeting.

An invitation from Dr. Miller to visit Rush Medical College was read and accepted, and the Secretary requested to acknowledge it.

The Association then adjourned till 3 o'clock, P.M.

*Third Session—Wednesday Afternoon, Sept. 8th.*

The Association met at 3 o'clock, P.M., President Sargent in the Chair. The minutes of the previous session were read by the Secretary and approved.

The President appointed Henry Haviland, of New York, Robert J. Brown, of Kansas, and Henry J. Menninger, of North Carolina, as the Committee on the time and place of meeting.

The committee appointed to consider the recommendations of the Business Committee relative to the Constitution and Laws, reported that the proposed changes would be inexpedient at this session, and suggested reference to a committee to report next year.

The suggestion of the Committee was adopted, and, on motion of Mr. Colcord, to consist of five members.

Dr. Squibb moved that the President, Secretary, and Treasurer be three members of this committee, which was carried, when the President appointed William Procter, Jr., and Samuel M. Colcord, to complete the committee.

The Chairman of the Executive Committee reported the following additional applications for membership, the applicants having complied with the requirements of the Constitution.

John E. Fitzgerald, Washington, D. C.
Walter P. Colburn, Peoria, Ill.
B. F. Miles, Peoria, Ill.
Charles Christian Fredigke, Chicago, Ill.
O. F. Fuller, Chicago, Ill.
Joseph Hirsh, " "
Samuel F. Poorman, Chicago, Ill.
Jefferson E. Duncan, Boston, Mass.
J. Thomas Leary, " "
Ottmar Eberbach, Ann Arbor, Mich.
Albert H. Mann, Kansas City, Mo.
Ernest Dreher, Newark, N. J.
Isaac W. Jaques, " "
Theron W. Van Gieson, Newark, N. J.
George H. Fish, Saratoga Springs, N. Y.
James L. Knowles, Williamsburg, N. Y.
Charles C. Matthews, Shippensburg, Pa.
Hugh H. Hampton, Memphis, Tenn
George H. Jones, " "

The President appointed Messrs. Ehrman and Jamieson as tellers, who reported the unanimous election of the candidates.

Dr. Squibb read a volunteer paper entitled "Notes on Rhubarb," and exhibited a number of samples of powdered rhubarb of different qualities, showing the influence on its apparent color when laid on blue and yellow paper. Several cases of rhubarb root of excellent quality were shown, one in which the pieces had all been bored and the defects removed, the borings from the whole case being shown to give an idea of the quality.

Dr. Squibb also read a volunteer paper contributed by Mr. F. C. Musgiller, on Collodion. He regards it as a mistake on the part of the British Pharmacopœia to have given to the flexible collodion, the kind most generally used, a compound name, "collodium flexile," whilst the contractile kind, which is little used, is simply called "collodium."

When query 1st, on the Origin, Culture and Trade in Rhubarb in China, was called up, the Secretary said, I have been informed that Mr. Lincoln has taken steps to get as much information as possible from China direct, but has thus far not re-

ceived it, and it is suggested that the query be dropped. Should Mr. Lincoln obtain the expected information he will present it as a volunteer paper to the next meeting.

Query 5, on a nondeliquescent Persulphate of Iron, accepted by Mr. Heydenreich, was not ready, his experiments so far not having proved satisfactory.

Query 8, on Glassware, was answered by Mr. Wiegand and referred for publicatiou.

Query 9, on the Corks of Commerce, was answered by Mr. Bedford, by a written essay, illustrated by various specimens, showing the results of the several machines noticed in the paper.

Query 10, on the proper strength of Alcohol for tinctures of Gum Resins, was read by Alfred B. Taylor.

Query 11, accepted by Mr. Heydenreich, was replied to in a paper read by the Secretary, on drugs and preparations officinal in Germany, and recommended for adoption into the United States Pharmacopœia.

Mr. Markoe made some verbal remarks in reply to query 13, on our Commercial Asphaltums.

Dr. Squibb stated that Mr. Stearns had prepared no paper on query 14, relating to the emoluments and social advantages of pharmacy as a profession and trade, and that he desired to be relieved from answering it.

Mr. Markoe read a paper, in reply to query 16, on a substitute for camphor as a protection against moths and other insects.

The Secretary, Prof. Maisch, read a paper in answer to query 20, on the production of Lycopodium in the United States; another, in reply to query 30, on a pharmaceutical preparation from Lactuca canadensis; both of which were referred for publication.

Dr. Squibb stated that Dr. Duffield has been and still is very ill, so as to be unable to reply to queries 21 and 28.

Prof. Procter stated that he was not ready to reply to query 22d, on Abies Canadensis, which had been partly investigated, and it was continued for report next year.

Mr. Diehl of Louisville, in a letter to Prof. Procter, stated that he had been unable, owing to business changes, etc., from collecting the numerous data necessary to reply to query 23d,

relative to indigenous drugs, but that he hoped by next year to accomplish it. The subject was, on motion, continued to Mr. Diehl.

The Secretary read a letter from Mr. Jeannot, giving similar reasons for not replying to query 25, which was also continued.

Mr. Tufts stated that a letter just received from Prof. J. Faris Moore, of Baltimore, gave reasons for his absence, which was unexpected, and suggested that as the probable reason why no answer to query 24th was received.

The Secretary stated that Mr. Lancaster had been engaged on the reply to query 32, but no answer had been received. Mr. McCollin suggested that domestic affliction had probably interfered with this duty.

Alfred B. Taylor read a volunteer paper on the preparation of fluid extracts by percolation and without heat, by Mr. Campbell's process, which was illustrated with numerous specimens and residues. The paper was accepted and referred.

The President invited all members present at this meeting to assemble to-morrow morning at 8 o'clock, at Dearborn Park, for the purpose of having a photographic picture taken.

On motion, the Association adjourned till to-morrow morning at 9 o'clock.

*Fourth Session.—Thursday Morning, Sept. 9th.*

The meeting was called to order at 10 o'clock A. M. President Sargent in the Chair. The minutes were read by the Secretary and approved.

This being the time fixed for the consideration of the Law regulating Pharmacy, Prof. Maisch, to bring the subject forward, moved that the draft as presented by the committee be adopted.

[For copy of Bill see Editorial Department.]

Considerable difference of opinion prevailed as to the best mode of considering the bill, some deeming it best to consider it section by section, adopting or rejecting in course; others thought that the prominent principles or points upon which the bill is based should be each decided before proceeding to the details of the bill, for if the Association should approve or disapprove of these would the proposed bill stand or fall as the wish of this body.

Mr. Bartlett believed the bill bore unequally upon those in business and those qualified for it but in subordinate capacity, and that capital rather than intelligence was favored.

Prof. Maisch explained that this was only at the start, as it would be out of the question to make the law *ex post facto*, as all now in business have a legal right to continue.

Mr. Merrill doubted the propriety of exacting four years preliminary service from all who enter the business before graduating them. Persons of mature years and physicians preparing to abandon practice could prepare themselves in a much briefer period.

Some discussion here arose in reference to the propriety of adopting such a bill as the expressed wish of the Association to the State Legislatures.

Mr. Colcord disapproved of the bill being sent as the wish of the Association, but only as giving an idea of what will reach the wants of the public in case any Legislature requires a law.

Prof. Maisch here gave a history of the legislation for pharmacy in several of the State Legislatures during their last sessions. He believed it very desirable that this Association should give expression to its opinion in the form of a Law, involving the principles that should be in any good bill suited to the requirements of the public and of pharmaceutists.

Mr. West, of Indiana, considered the proposed law quite impracticable and unsuited to the Western States, and that such laws could only be carried out where Colleges of Pharmacy exist to aid in their support.

Prof. Maisch believed Mr. West was mistaken in his estimate of the practicability of the bill. He had had much correspondence as Secretary, with the officers of several States and with the pharmaceutists of those States, which convinced him that some such bill, modified to suit particular cases, would meet the wants of all the States.

Mr. Dietrich, of Ohio, thought the bill had better be taken up by sections. He was in favor of adopting a bill, and this bill if it could be agreed upon. His State had postponed action until this meeting should give expression to its deliberations in

the draft of a law. He therefore moved that the bill be taken up by sections, each section being read and discussed separately.

A division being called, the motion prevailed, 47 to 19.

Mr. Procter, before proceeding, wished to say a few words against considering the bill by sections, and in favor of first considering the principles upon which it is based. He thought, from the experience of the Philadelphia College, that much time would be consumed if we undertake to consider this law in this way. Let the features of registration, of qualification by education, the sale of poisons and the prevention of adulteration of drugs, be first thoroughly discussed and adopted, or rejected, and then let the bill be made to accord. Many members did not approve of the law including drug adulteration, preferring to leave that to be punished as other misdemeanors are at common law.

Mr. Taylor, of Philadelphia, thought the resolution to take up the bill by sections was a little premature, and that it was well to discuss the principles of the bill first.

Mr. Brown, of Kansas, doubted the possibility of framing a bill to suit all the States, and that it had better be left to each State.

Dr. Squibb said we had already decided to take up the bill by sections, and that the first thing was the preamble. He questioned some of the provisions of the bill, and objected specially to the clause preventing physicians from practising pharmacy under their diploma, believing they have such right. He believed a series of resolutions embodying the sentiment of the Association as to what points are needed to be accomplished by legislation would be enough without a formal bill.

Mr. Wright, of New York, said the Association had decided that a bill should be had by appointing a committee to frame one.

Dr. Squibb gave the Committee due credit for its labor, but believed the result was still the opinion of the Committee and not of the Association until adopted.

Mr. Coddington thought that, unless a law was proposed by this meeting, several States would pass laws which might be objectionable. He thought the time had come when apothe-

caries should have an influence in the legislation on pharmacy without compromising the interests of physicians.

Mr. Colcord would like to speak on the general merits of the bill, but could not discuss its sections.

Mr. West suggested a reconsideration of the vote to take up the bill by sections.

Mr. Brown moved the adoption of the preamble.

Mr. Taylor opposed this and advocated the adoption of the fundamental principles of the law before going further.

Mr. Procter coincided with this view, and suggested that the mover of the resolution to consider by sections would withdraw it to allow of that course.

Mr. Dietrich consented to a reconsideration of his motion, which being agreed to, the original motion to consider by sections was put and lost.

Mr. Procter then proposed that the Association should decide whether registration should be adopted as a feature of the proposed bill.

Mr. West understood the bill reported by the Committee was before us.

The President said the suggestion to consider first the principles upon which the bill is to be based is eminently correct, and would greatly facilitate the settlement of the question whether the bill reported by the committee will be satisfactory.

Mr. Shinn said if any member has a better basis upon which to found legislation than the registration of pharmaceutists, he hoped it would be produced now.

Mr. Procter again urged the decision of the question of what principles should form the basis of the bill.

Dr. Squibb believed registration was only a means to ascertain and secure qualification, and that the enunciation of our desire as an Association to have qualification the basis of all legislation for pharmacy would be sufficient.

Mr. Menninger moved that, "in the opinion of this Association, the registration of pharmacists is desirable in the various States of the Union, and that such registration be based on education." Before this was seconded it was again urged that Prof.

Maisch's motion to adopt the report as a whole was before the meeting. Mr. Maisch then withdrew his motion.

Mr. Taylor suggested that the proposition to consider qualification the basis of the law, with registration to ascertain and sustain it, be now adopted.

Dr. Squibb opposed registration, on the ground of its creating many political offices and office-holders, and thought that the Association should keep clear of proposing it. Let it be declared that we desire that pharmaceutists should be required to possess legal qualification to practice, and leave the means to the legislators.

Mr. Procter stated that registration is being carried out very successfully in Great Britain, under the direction of the Pharmaceutical Society, which is recognized by Parliament as the agent for effecting registration and ascertaining qualification. It is not necessarily a political agency, though so proposed in the Committee's bill.

Mr. Colcord favored Dr. Squibb's proposition of a simple declaration.

Mr. Coddington urged the necessity of proposing a definite law, as, unless it is done, the legislators will enact laws that will be much more burthensome and oppressive. Some machinery is absolutely necessary, and he thought that of the bill probably as good as any that would be likely to originate with legislators.

Mr. Wright believed we should get on by taking a vote on the question of registration as the means of ascertaining qualification.

Prof. Maisch considered that the law proposed by the Committee would impose burdens on the practising pharmacist not before felt; and that those burdens are for the benefit of the public and not for the advantage of the apothecary.

Mr. Shinn believed it was evident that all members did not desire legislation, but the law proposed by the Committee is brought forward conditionally, viz.:—to meet the demand for a law on the part of the community. He therefore believed that the proposed law should be offered only in case it is necessary by the forcing of legislation upon us, and then to be offered for guidance.

Mr. Merrill thought it inexpedient to have any bill requiring registration, and believed, if adopted, it would become inoperative, he was opposed to it as oppressive. He considered that the law must act by compelling every apothecary to employ competent clerks, by making him responsible for the acts of these clerks when they are unqualified.

Mr. Ebert wanted to know what our courts would understand by qualification, if they have no standard to judge by.

Mr. Haviland proposed to move that all the clauses regarding registration be stricken out.

Dr. Squibb stated the difficulty of drafting resolutions as important as those now needed, in the hurry of business. He had prepared a sketch which he proposed now to read.

*Resolved*, That the draft of a Law presented by a Committee of the Association appointed for that purpose, be incorporated in the Minutes of the Association, as one scheme whereby the objects of the Association may be attained; and that as such it is placed on record for the use of the Legislatures of the different States of the Union, if they please to consult it; but it is also

*Resolved*, That the difficulties of constructing a proper form of law adapted to general use as such, and the impossibility of obtaining harmonious action in our own body is so apparent, that we are satisfied with enunciating the broad principle which in our judgment underlies most of the accidents and abuses which we aim to correct.

*Resolved*, That this principle is that lack of qualification in those who prepare and dispense medicinal substances, is the chief cause of the accidents and difficulties which occur, and that proper qualification and education should be secured by law.

Mr. Colcord expressed satisfaction with these resolutions.

Mr. Procter, while agreeing with the resolutions, would have been pleased if the Association could have gone further and expressed more specifically in a series of resolutions all the salient points of the bill.

Dr. Squibb then proposed that, if a majority of the Association approved the resolutions, the subject be postponed till the commencement of the afternoon session, when the resolutions, more carefully elaborated, could be laid before the meeting for its action. Agreed to.

Mr. Shinn, on behalf of the Committee appointed to bring

forward the subjects suggested in the President's address, stated that they had prepared a series of resolutions, which could be read and acted on separately, as the most direct way.

1. *Resolved*, That in view of the arduous labors involved, the salary of the Permanent Secretary for the ensuing year be increased to $400, and that of the Treasurer to $200.

Prof. Maisch wished to know where the money was to come from.

Mr. Colcord seconded the resolution, and expressed great pleasure that it had been brought forward.

Dr. Squibb heartily approved of the resolution, and hoped it would be made permanent instead of for the ensuing year only.

After several motions to render the resolution continuous and to increase the amount of salary were lost, the original resolution was adopted.

Mr. Shinn read the second resolution:

2. *Resolved*, That the Secretary be directed to forward to the President of the Decennial Pharmacopœial Convention, in May next, a printed copy of the Proceedings of this Convention.

Dr. Squibb seconded the resolution in order to bring it under dissussion; he was opposed to it, because the report on the Pharmacopœia of this year is only one of a series by the Pharmacopœia Committee, and hence the proceedings of this year would not represent the action of the Association; he also considered it unnecessary, as at best it is only an act of courtesy, we having no right of representation.

The motion was then put and negatived.

Mr. Shinn then offered the third:

3. *Resolved*, That this Association earnestly recommend every incorporated College of Pharmacy in the United States to send delegates to the next Decennial Convention, prepared to present the views of their respective Colleges on the revision of the Pharmacopœia.

Which was adopted.

Mr. Shinn's, next resolution regretted that the Committee on the Drug Market had failed to prepare a report, and asked that the rules be suspended to permit the Committee to prepare statistical tables in time for the Proceedings.

After some discussion the resolution was rejected.

Mr. Shinn next presented the following:

*Resolved*, That a committee of three be appointed by the President of this Association to confer with the Government in regard to the tariff on drugs, should occasion for it arise.

Mr. Colcord seconded the motion in order to oppose it; he considered the question of the tariff a political one, on which the members of the Association differ greatly, and he did not think we should have much influence.

Dr. Squibb and Mr. Shinn took the same view, and Mr. Haviland spoke in the affirmative. The President read a note from the Chairman of the Committee on the Drug Market, favoring the resolution, which was then put and lost.

The next resolution suggested the appointment of a Committee to present the prepared Pharmacy Law to the several Legislatures. This being premature, the resolution was withdrawn by Mr. Shinn.

The President read a letter from Mr. Fuller, declining to serve as a member of the Committee on the Drug Market.

On motion of Dr. Squibb, the declination was accepted and the vacancy referred to the Committee on Nominations. Carried.

The Business Committee called for the report of the Committee on Photographs appointed last year.

Mr. Bedford stated that Mr. Lincoln, the Chairman, had requested him to report verbally that about 100 photographs had been collected, and it was very desirable to extend the collection. He therefore invited all who had photographs with them and had not contributed to hand them to Mr. Shinn or himself.

Invitations were received from Hovey & Heffron to visit their art gallery, and from D. B. Shipman to visit his white lead works, which were accepted and directed to be acknowledged.

The Executive Committee now proposed the following candidates for membership. Messrs E. C. Jones and W. C. Bakes, acting as tellers, who reported their election.

| | |
|---|---|
| Chas. Wm. Gracely, of Chicago, Ill. | S. H. Douglass, Ann Arbor, Mich. |
| John F. Street, Bay City, Mich. | Horace Burrough, Baltimore, M.D. |
| Jos. E. Anderson, Mare Island, Cal. | J. R. Chapman, Detroit, Mich. |

Adjourned to 3 o'clock this afternoon.

*Fifth Session—Thursday Afternoon, Sept. 9th.*

The meeting was called to order, President Sargent in the Chair.

The minutes of the Fourth Session were read and adopted.

Dr. E. R. Squibb offered the following motion, to be added as a preface to his Report on the Pharmacopœia:

That in the reference of his report on the Pharmacopœia to the Publishing Committee for publication in the Proceedings, the report be prefaced by the distinct statement that the Association, in publishing the report, does not endorse the judgment of the reporter in his recommendation to dismiss so many articles.

After some discussion in reference to this note, it was agreed to.

Dr. Squibb now read the following resolutions, intended to express the sense of this meeting in reference to the subject of legislation for Pharmacy:

1. *Resolved*, That the draft of a law to regulate the practice of Pharmacy, proposed by the Committee of the Association appointed for that purpose, be accepted and published in the Proceedings of the Association, as being one method whereby the objects of this body in regard to that subject might be attempted, and that as a method which embraces many useful details, arranged with great care and labor, it is recorded and published as well adapted to be useful to the Legislatures of the different States of the Union whenever they may see fit to respond to the earnest desire and call of this Association and of the community at large for enactments upon this subject.

2. *Resolved*, That the difficulties of constructing a form of a law proper to be endorsed and recommended by this Association for general application in all the States, are such that we must be satisfied with enunciating the broad principles which in our judgment should direct all legislation upon this important subject.

3. *Resolved*, That we see with alarm and regret the rapid increase in the number of accidents which occur from mistakes and mismanagement in dispensing medicinal substances, and that we earnestly desire to see these casualities checked and controlled.

4. *Resolved*, That we regard the ignorance and irresponsibility of many who engage in the practice of Pharmacy without proper qualification as the principal cause of such casualities.

5. *Resolved*, That a proper degree of education and qualification should be secured by law, and that all proper measures for educating and qualifying persons for duties so important should receive more encouragement and protection from the Law than they have hitherto done.

6. *Resolved*, That the report of the Committee embracing the proposed draft of a law, of the action had in this Association upon that report, and of these resolutions, be printed in pamphlet form, and that ten copies be sent to the Governors of the different States of the United States.

Dr. Squibb proposed that these resolutions should be taken up *seriatum*, and his view was agreed to.

The first resolution was then adopted.

Mr. Wright, of New York, Chairman of the Committee on the Drug Law, spoke at some length, giving a history of the previous action of the Association relative to the bill. He considered the resolutions of Dr. Squibb as ignoring the question of registration, which is the prominent point of the bill, which they virtually extinguished and laid on the shelf.

Mr. Colcord thought the Association competent to deal with the subject before it in any direction, and he approved of the resolutions as embodying the sense of a majority of the members.

The *second*, *third* and *fourth* resolutions were then adopted.

Mr. Merrill very much doubted the truthfulness of the fourth resolution. He believed that accidents happen more from carelessness and inattention than from ignorance, and that they occur more frequently with those who know better than with the really ignorant; nevertheless he believed that the proportion of accidents now is not greater than formerly, and that it is the habit of newspapers to notice them more than formerly, and the rapidity of telegraphic communication gives the impression of a more numerous occurrence of these accidents.

The fifth resolution was then adopted, and the sixth, relative to sending the law and resolutions, was, after some discussion, also adopted, it being amended to read, after the word Governors, "and the Speakers of the Legislatures," &c.

The Secretary informed the meeting that he had just received from the Montreal Chemists' Association a draft of a law which they propose to recommend for enactment in Canada. It appears, like our own, to be based on the English Law.

The Business Committee, to whom the Report on the Progress of Pharmacy was referred for consideration, reported that the suggestions of Dr. Hoffman appear to the Committee worthy of the careful consideration of the Association, and offered the following resolutions:—

*Resolved*, That the Committee on the Progress of Pharmacy shall consist of three members, who shall be elected every third year, to serve for the period of three years, and that the subjects upon which they report shall be divided into three parts, one part of which shall be reported on by each member of the Committee.

*Resolved*, That the report of this Committee, in addition to being printed in the Proceedings of the Association, shall be published separately in book form.

The President. If there is no objection they will lay over until next year.

Mr. Haviland, on behalf of the Committee on the time and place for the next annual meeting, reported that they recommend Saratoga Springs, New York, on the second Tuesday of September, 1870.

Mr. Maisch desired to know the reasons that induced the Committee to depart from the usual course of meeting in large cities.

Mr. Haviland replied that it was to break up the habit of causing expensive entertainments to be given by the members of the place visited, and that of electing the President from the place of meeting when another member might be more desirable.

Mr. Procter asked whether the report of the Committee was final or subject to the decision of the meeting?

Mr. Haviland. The meeting has the decision.

Mr. Tufts had just received a letter from Baltimore reiterating its invitation to meet there next year.

Mr. Colcord moved that when we adjourn we adjourn to meet at Saratoga Springs, and advocated the measure for the reasons given by Mr. Haviland.

Mr. Procter opposed the motion, and hoped we would meet somewhere South. We had an invitation from Baltimore last year and this; he thought the argument against large cities not sound, and would rather meet in Richmond, Va., than at Saratoga Springs.

Mr. Menninger, of N. Carolina, advocated Saratoga for the same reasons given by Mr. Colcord, and doubted the propriety of going South next year.

Mr. Brown, of Kansas, advocated Saratoga on presidential grounds, that that officer should be taken from the Association at large.

Mr. Ebert agreed with Mr. Brown's view, and said it was the custom of the British conference to elect their presidents regardless of locality and solely on merit. [So far, they have all been taken from London.—EDITOR.]

Dr. Squibb thought members had overlooked the fact that the chief reason of the migratory character of the Association was to stimulate pharmacy at the places of meeting, and this could not be done if the number of pharmacists there was small; besides it was now usual to hold exhibitions for the same object. He approved of the plan of not accepting expensive entertainments, and of the Association paying its actual expenses.

Mr. Haviland said at the season proposed the hotels at Saratoga would be but thinly occupied, and it is very accessible, and it is probable that board would be lower.

Mr. Hambright, of Chicago, advocated going south and trying the experiment of paying our way there and gathering our old southern members and others into the Association.

Mr. Procter would be much pleased if the members could be induced to go to Baltimore, but if they cannot, it would be doing pharmacy in the South a great good if we were to agree to meet in Richmond, and pay our way, so that no expense would accrue to the pharmaceutists there.

Mr. Maisch said there was not a member of the Association there to appoint as Local Secretary, Fredericksburg and Alexandria being the nearest.

After various opinions *pro* and *con* regarding the climate etc. of the South in September, Dr. Squibb suggested that the meeting be called for Washington, D. C., in May next, when the Pharmacopœia Convention and the American Medical Association meet.

Mr. Haviland thought it a good suggestion, and, on motion of Mr. Colcord the subject was postponed until Friday morning.

Dr. Weller, of Chicago, read a paper on weights and measures.

A motion was made to refer it to the Publishing Committee.

Prof. Maisch asked if the paper was not essentially the same in principle as that of Mr. Taylor, read to and published by the Association in 1859.

Mr. Taylor. They are exactly the same.

Mr. Maisch doubted the propriety of printing it.

Mr. Taylor thought it might go to the Executive Committee with discretionary power, which was agreed to.

The Business Committee offered a printed paper by Mr. E. Dubois, of the U. S. Mint, at Philadelphia, to be read as embodying some new views on weights and measures, but owing to the pressure of business it was postponed.

Mr. Procter read the report of the Committee on Queries, which was accepted, and is as follows:

The Committee on Queries report the following list for the ensuing year, with the names of those who have accepted them for examination:

1. What is the medicinal value of the portion of Socotrine Aloes left undissolved by water? And does it contain Aloin in appreciable quantity? *Accepted by Louis Strehl, of Chicago.*

2. What is the best, simple and practical method or arrangement for retaining the Ammonia strength of Carbonate of Ammonia in the dispenpensing bottle or jar? *Accepted by Ambrose Smith, of Phila.*

3. Coffee in one or another form has been recommended as an antitoxic, as a deodorant, and as a means of masking saline bitterness. To what extent are these qualities possessed by Coffee, and what conditions are most favorable to its action?

*Accepted by D. L. Dyson, of Bloomington, Ill.*

4. What is the mode of action of "Insect Powder," the flowers of Pyrethrum, Caucasicum or Roseum, as an insecticide? And is there an American plant that possesses a like power?

*Accepted by S. S. Garrigues, of Saginaw, Mich.*

5. Eupatorium Perfoliatum, an examination of its proximate principles, especially that to which its bitterness is due.

*Accepted by Joseph Hirsh, of Chicago.*

6. What is the easiest and most practicable method of isolating Glycyrrhizin; to what extent does it possess the power of masking bitterness; and what is its mode of action?

*Accepted by Joseph Hirsh, of Chicago.*

7. What is the best and most eligible liquid form for the preparation and administration of Guaiac Resin?

*Accepted by James T. Shinn, of Phila.*

8. The relation of Mannite to Glucose in composition is very close. Can Mannite be prepared artificially, and if so, how? And has it the same physiological properties? *Accepted by Joseph Hirsh, of Chicago.*

9. What is the actual influence of Soap on the Resin of Scammony, and on the Resinoid Matter of Colocynth and Aloes in the compound extract of Colocynth when the whole are dissolved together in dilated alco-

hol, and is this influence favorable to the medicinal power and value of the preparation? *Accepted by Prof. G. F. H. Markoe, of Boston, Mass.*

10. Is not the proportion of Acetic Acid used in the process of the U. S. P. for Acetic Extract of Colchicum too large? And to what extent may it be reduced? *Accepted by Edward C. Jones, of Phila.*

11. It has been proposed to substitute Glycerin for Sugar as a solvent and antiseptic in Fluid extracts. Does this ingredient in quantity effect their medicinal power in any way?

*Accepted by W. J. M. Gordon, of Cincinnati.*

12. Pepsin is valued for its medicinal power in connection with disordered digestion. What are the best sources of, and what the most available process for the preparation of it for medicinal use and for, the cuisine.

*Accepted by S. Mason McCollin, of Phila.*

13. The cold infusion of commercial Wild Cherry Bark sometimes varies considerably in color. Is this due to the time at which the bark is collected, or to what other cause?

*Accepted by Joseph L. Lemberger, of Lebanon, Pa.*

14. What are the arguments for and against a change of weights in the United States Pharmacopœia, and especially as regards the adoption of Avoirdupois or Metrical Weights by that authority?

*Accepted by E. L. Milhau.*

15. What is the present state of the Foreign Opium trade of the United States, and to what extent is it influenced, if at all, by the culture of the Poppy and the domestic production of Opium?

*Accepted by P. W. Bedford, of N. Y.*

16. An essay on Filtering Papers and Filters with general remarks on the important branch of Practical Pharmacy in which they are employed.

*Accepted by Joseph Hirsh.*

17. What is the true power of Camphor as an insecticide? Does it destroy insects already existing in clothing, or does it merely act as a preventive by its odor?

*Accepted by Prof. G. F. H. Markoe, of Boston, Mass.*

18 Does Cassia Marilandica contain a glucoside principle analagous to that found in Alexandria Senna, by Dragendorff & Kubley?

*Accepted by Joel S. Orne, of Cambridgeport, Mass.*

19. Gillenia trifoliata. What process will isolate its emetic principle and what are the characters of the latter?

*Accepted by Albert E. Ebert, of Chicago.*

20. What is the present condition of the Honey trade in the United States, domestic and foreign?

*Accepted by C. F. Stacy, of Charlestown, Mass.*

21. What is the best antidote and treatment for Poisoning by Cyanide of Potassium that can be kept ready and used promptly?

*Accepted by Louis Strehl, of Chicago.*

22. Peppermint is largely raised in Ohio, New York and Michigan, for distillation. What is the present state of this industry as regards extent of production and quality, especially in reference to improvements in purity, based on care in culture?

*Accepted by Robert S. Drake, of Piqua, Ohio.*

23. What is the most reliable process for obtaining the Tartrate of Potassa that will be ready and uniformly soluble?

*Accepted by Edwin Mallinckrodt, of St. Louis, Mo.*

24. It having been shown by Charles Bullock, that Veratrum Viride contains no veratria, (the source of that alkaloid for commerce being the fruit of Asagrœa officinalis), it is queried, does the veratria of commerce exist in Veratrum album, or has some other alkaloid been confounded with it? *Accepted by S. Mason McCollin, of Phila.*

25. What is the best process for Assaying Opium, to determine its morphia strength, suited for adoption into the U. S. Pharmacopœia.

*Accepted by Wm. Procter, Jr., of Phila.*

An invitation to visit the laboratory of practical chemistry of the Chicago Medical College was accepted with thanks.

Prof. Markoe read an answer to query 6th, relative to testing narcotic extracts.

This paper elicited some discussion as to the merit of Mayer's test for alkaloids, by Dr. Squibb, Prof. Maisch and Mr. Markoe.

Mr. Taylor read a paper by D. S. Dyson, on Oxalate of Iron.

Mr. Massot read a volunteer paper by Theo. Fay, relative to the Profession of Pharmacy, which was referred to the Executive Committee.

Mr. Van Sweringen read a volunteer paper entitled "Pharmacy," which was referred to the Executive Committee.

The Secretary read an answer to Query 17, by Joseph L. Lemberger, on substituting indigenous Aromatics for Cardomoms in officinal preparations.

Also a volunteer paper by P. C. Candidus, on Compound Elixir of Taraxacum as the best vehicle for Quinine.

Also one by James T. King, on the Deposit in Tincture of Rhubarb.

Query 31 was answered by Isaac W. Smith, of Philadelphia.

At this juncture Dr. Squibb remarked that he had a pream-

ble and resolutions to offer, which required more courage than he possessed, and hoped the members would make due allowance for any feeling he might manifest in reading them.

*Whereas*, It must be an object of this Association, in common with all others of similar character, to oppose what is wrong within the sphere of its action and influence, and

*Whereas*, The Constitution of the Association asserts that its objects are to elevate the standing, increase the knowledge, oppose the adulterations, and suppress the empyricisms of Pharmacy, and

*Whereas*, A member of this Association has put forth a nostrum called "Sweet Quinine," which contains no quinine, and is therefore a fradulent imposture, therefore

*Resolved*, That Mr. Frederick Stearns has, in this so-called "sweet quinine," and in the advertisements concerning it, violated the sense of moral rectitude of this Association, and has violated its Constitution and the general purposes of its organization.

*Resolved*, That for these offences, Mr. Frederick Stearns, of Detroit, be expelled from this Association.

The President remarked that he should be sorry to put the question on such a resolution without having heard more expression from the members.

Dr. Garrigues, Mr. Hambright and others, advocated postponement until the morning session, which was agreed to.

Prof. Maisch here announced his intention to resign the Permanent Secretaryship, to take effect at the beginning of the session of 1870, giving as a reason that the duties had become so extensive and occupied so much time, that in justice to himself it was utterly impossible for him to retain them. For the latter reason, however, he had fixed the time for next year, so that the Association would have a year to select his successor.

Mr. Procter desired to know whether the resignation would exclude his acting at the next meeting; to which Prof. Maisch replied that it would, (meaning probably after the election of officers at the second session).

The meeting then adjourned to Friday, Sept. 10th, at 9 o'clock, A. M.

*Sixth Session—Friday Morning, Sept. 10th.*

The Association met at 9 o'clock, A. M., President Sargent in the Chair. The minutes were read and approved.

The time and place for holding the next meeting was taken up, when the Secretary read the following telegram, dated yesterday:

"The Maryland College of Pharmacy extends a cordial invitation to the American Pharmaceutical Association to meet in Baltimore in 1870."

Signed, J. J. SMITH.

The resolution before the meeting at the time of postponing the subject, was that the next meeting be held at Saratago Springs, N. Y.

Mr. Tufts offered an amendment to substitute Baltimore, which was carried, and the amended resolution adopted, so that the Association will adjourn to meet in Baltimore on the 2d Monday of September, 1870.

The nominating Committee reported that Mr. Henry W. Fuller agreed to serve as Chairman of the Committee on the Drug Market, and had withdrawn his declination.

Mr. Taylor read a letter from D. C. Robbins, of N. Y., to H. W. Fuller. Referred to the Executive Committee.

The resolutions offered at the fifth session, concerning Mr. Stearns, were called up and read. (See page 507.)

A member suggested that as Mr. Stearns was present, it was proper for him to make a statement in regard to the matter.

Mr. Stearns then came forward and said that he felt it was due, not only to himself but also to the Association, that he should explain where he stood in the matter charged against him. It was true that he had put a speciality in the market under the trade name of "Sweet Quinine," which is made of cinchonia. He felt justified in doing so from two motives; first pecuniary gain to himself; second a belief in the efficacy of his medicine. He then, to explain the matter, gave a statement in reference to the history of the introduction of quinine by Pelletier, which, in his opinion, caused that alkaloid to have an undue degree of consideration in medicine and turned observation away from cinchona, which had priority of discovery. Believing, therefore, that cinchona possessed the same kind of curative power and qualities as quinia, he thought it would be a good thing to bring it into use and thus render available a large amount of a useful agent which fashion prevented from being used as it deserved. To effect this purpose, the bringing of cinchonia into use and thus deriving pecuniary gain, he had availed himself of the name of Quinia by inference in adopting the trade name "Sweet Quinine." This constituted his offence; he considered it an error of policy, rather than

of principle, and not deserving of the severe penalty expressed in the resolutions. Each must judge for himself, from his own moral standard, in such cases; whatever the Association did he would have to bow to, however serious the result might be to his feelings and interests. He could not feel that he deserved any such extreme action as these resolutions call for, and, if carried out, his sense of justice would be outraged; he thought the members could cause their action to take a milder and more charitable course.

Mr. Colcord asked Mr. Stearns if he proposed to continue his present course, or whether he intended to abandon it, acknowledging it as an error against the Ethics of the Association?

Mr. Stearns replied that what he had done he had done; he wished to be judged by that. That was all the Association could reach. His future acts would speak for themselves. He went into the business reflectively and stood square on the position then taken. He might have resigned, but that would have been cowardly.

Mr. Ebert read a letter written by Mr. Stearns to a Cincinnati Journal, which contained views contrary to the Code of Ethics.

William Wright, of New York, thought that the resolutions of expulsion were too severe for the offence, and offered the following as a substitute, therefore:

"*Resolved*, That in the manufacture and manner of advertising the article known as Sweet Quinine, Mr. Frederick Stearns has committed a serious offence against the Ethics of this Association, and is deserving of its severe censure."

Mr. Shinn thought the Association should seriously consider which of the two courses would best subserve its ends. If it is to have any future influence with the Medical and Pharmaceutical Professions and the community at large, it must set its face against any attempt to deceive or mislead either one or the other. In his estimation a vote of censure would not be as effectual as one of expulsion, and though very distasteful to all members, it is due to the public that we should set aside feelings and vote on principle.

Mr. Colcord, of Boston, thought the case of Mr. Stearns should be dealt with as a matter of principle. He had been a member of the Committee on the Constitution. He stood there to urge the penalty of those laws. He was a personal friend of Mr. Stearns. To inflict a penalty on him would be like plucking out his own right eye. He had great sympathy for Mr. Stearns, but the Ethical Code of the Association must be upheld. If we are not strong enough to do it, we had better cease to exist as an Association. There are thousands who lie sick and dying and who demand pure drugs Mr. Stearns, as he says, went into this matter knowingly. He was always an advocate for Ethics. I would have the Association to do by him as it would do by me. It is a question of principle.

Mr. Procter said that Mr. Stearns had had an opportunity to defend his course in this matter. He thought Mr. S. was sincere in his statement that he had not broken the moral law but had made a mistake in policy, and had gone counter to our Ethical rules. This certainly showed a moral obliquity for which he could not account. The act of Mr. Stearns had certainly wounded the virtue of the Association in one of its best members. It must be healed, even though it be necessary to resort to the knife and remove the offending member.

Mr. Wright, of New York, wished to know if expulsion was resorted to in this case, how long the Association would exist. How many of its members make their preparations fully up to the standard. Who was there that did not offend more or less?

Dr. Squibb was asked to express his views, and replied that he could not discuss the subject; he had no desire or heart to enter into the matter. He had no reply to make to Mr. Stearns, who he honored for his frankness and openness. We would do well to remember a lesson of the Highest authority; "Let him who is without (this) sin among you first cast a stone."

Mr. Gilmore thought the use of the words "Sweet Quinine" as a trade mark unobjectionable. If quinine was wanted it ought to be asked for, and if we used sweet quinine we should know what it was first, and not expect it to be bitter quinine.

Mr. Menninger moved that the vote be taken by ayes and noes.

Mr. Colcord moved to amend the motion by calling the delegations of the Colleges and Associations first, which was carried.

Mr. Colcord also moved that the Chair order that all the members in the Hall should be present when the vote was taken. Carried.

Whilst those members in other parts of the Hall were being gathered, a general discussion occurred for and against the resolution of censure.

Mr. Bakes thought that whilst the sale of liquors over the soda-water counter by some members was suffered, he could not vote for the expulsion of Mr. Stearns.

Mr. Menninger stated that it had been the aim of the Association to raise the Standard of Pharmacy. Whatever truth there might be in this statement of Mr. Bakes, he did not believe the cases parallel, and "that two wrongs cannot make a right." If there was virtue in the Association, a violation of its Ethical Code called for expulsion. A man to be respected must respect himself; and so with this Association in its relation to the community, it must uphold its Code of Ethics; this had been fully and seriously violated. If we claim a high standard before the community, there is but one remedy and that remedy is expulsion.

Mr. Stearns wished it understood that he was only to be judged for the past. He had no promises to make for the future. He might have resigned, but that would have been cowardly. He wished the Association to act on the past; the future would take care of itself, and urged members not to act precipitately.

Mr. Balluf said if Mr. Stearns admits to have violated the Constitution and the Code of Ethics, there should be a way left for repentance and return to Mr. Stearns, but if he goes on, then let expulsion follow.

Mr. Hirsh thought the error of Mr. Stearns a nominal one, and that all would come right if he would change his "trade mark" to that of "sweet cinchonine."

Mr. Haviland believed it very important to proceed calmly and deliberately, and in view of the statement made by Mr. Stearns and Mr. Balluf, he would advise postponing the decision until the next annual meeting.

Mr. Tufts advised immediate action as against postponement, but thought the offence of Mr. Stearns could be met without driving him from among us; would not an expression of severe censure be sufficient punishment? His confidence in Mr. S. was such that he believed he would get himself out of the entanglements of this thing and do right.

Dr. Squibb said that if he had had no higher motive than the punishment of Mr. Stearns, these resolutions would never have been before the Association.

Mr. Bringhurst arose to say that he had hoped Mr. Stearns would have placed it in his power to have voted against the resolutions, by making some acknowledgement of error with guarantee for the future. As the matter then stood he deemed a vote of censure insufficient to clear the Association and that the other course was necessary.

The ayes and nayes were now called, and the amendment was lost, 30 to 64.

Mr. Haviland then renewed his motion to postpone until next year. It was lost, 24 to 56.

The question was then taken on the original resolutions of expulsion, which were adopted, 63 to 22.

The President then said it became his painful duty to announce that the resolutions are adopted, and in consequence, Mr. Frederick Stearns is expelled from this Association.

Mr. Stearns acknowledged his expulsion, and asked the Association to judge his future by what he should do, and retired.

Mr. Bringhurst now offered the following preamble and resolution:

"*Whereas*, as the custom of giving expensive entertainments to visiting members by those residing at the place of meeting is at once onerous to the latter, and detrimental to the interests of this Association; therefore

"*Resolved*, That the Local Secretary be instructed that the members of this Association neither expect nor desire any special entertainment at the hands of the Baltimore members during our meeting there in 1870."

Mr. Bringhurst thought this would relieve the members from any expensive effort as had now become common and which bad custom is growing upon us.

Mr. Colcord approved the resolution.

Dr. Squibb heartily approved of the resolution, and hoped the Association would give its voice in favor of it. We don't want to avoid social intercourse. If our friends in Baltimore should meet us in the evening at our hotel and give us the hand of welcome without an entertainment, and in the intervals of the meeting let us do as we please in the employment of our time, they would thus extend the best kind of hospitality to us. When so much pains are taken by our friends we feel averse to absent ourselves, even though a headache or other reason for absence may occur. He thought the sense of the Association was against these demonstrations of hospitality, and a proper expression of it in this full meeting would have its effect.

Mr. Shinn approved the remarks of Dr. Squibb.

Mr. Procter wished to say that an admirable way of showing kind feeling at the places of meeting was to facilitate the wishes of visiting members to see the places visited by giving printed information in small compass with a cheap map of the place. Then each member can direct his own steps.

The resolution was then adopted without dissent.

Mr. Shuey offered the following:

*Resolved*, That our warmest thanks are due to the Reception Committee and Local Secretary of this meeting of the Association for their cordial and hearty endeavors to receive and entertain our Association. That in Chicago we have met a whole-souled, large-hearted and open-handed people, and we will leave this place with feelings of regret.

The question was put by Mr. Tufts, and the resolution adopted.

Queries 26 and 29 being called for, Mr. Llewellyn of New Mexico, in a note to Mr. Procter, said he was unable, from circumstances arising out of his removal to that place, to answer the queries given to him.

Dr. Garrigues read a paper on Saginaw Valley Salt, which was accepted and referred for publication. The paper was illustrated by specimens of the Saginaw salt.

The Executive Committee reported the following names of candidates for membership, Messrs. Ehrman and Hambright Tellers, who reported a unanimous election:—

Charles F. Malone, Quincy, Ill.
T. E. Smith, Leavenworth, Kansas.
J. W. Price, " "
R. E. Wilson, Kansas City, Mo.
Abraham Boyd, Galesburg, Ill.
Henry T. O'Farrell, Chicago, Ill.
Newton Pierpont, Young America, Ill.
H. B. Johnson, Anderson, Ind.
William A. Cotting, Milledgeville, Ga.
John W. Ray, New York, N. Y.

Mr. Tufts now wanted to have a little informal talk with the members on the subject of the finances; he said the children of Israel were required to make bricks without straw, but they could not do it any more than the officers and committees of this Association could carry it on without funds. The Proceedings cost a great deal of money; the members expected to get them, but the members don't pay up their dues promptly; yet the printer must be paid. He could not do it, nor the Chairman of the Executive Committee. How was it to be done? That was the question. How are we to make bricks without straw?

Dr. Squibb gave notice of his intention to bring forward a change in the Constitution, to come up the 1st session next year, fixing the annual assessment at five dollars.

Mr. Procter asked the Treasurer if the amount due the Association was paid, was it sufficient to supply the treasury for the year.

Mr. Tufts thought it would, and for want of the $1000 to $1500 due each year the Executive officers have to be annoyed by the unavoidable delay of payments.

Mr. Procter thought if $3.00 would pay expenses we had better raise money by direct subscription and get square, and then try if we could not keep so with the three dollar subscription.

Dr. Squibb thought it would be too heavy a tax on individuals to raise it voluntarily.

Various remarks were made by Mr. Garrigues, Dr. Squibb, Prof. Maisch, Mr. Colcord, Mr. Sargent and Mr. Tufts.

Mr. Taylor moved that the Executive Committee be authorized to withhold the Proceedings from any member in arrears, and not to distribute the Proceedings until the money had been received. The motion was carried.

[A voluntary subscription made at the suggestion of Dr. Squibb by a number of members present was now handed to the Treasurer.]

Prof. Maisch read a paper by J. L. Kidwell, of Washington, D. C., which was referred.

Query 27 was not answered, but a letter from Mr. Eberle caused it to be continued to him till next year.

Mr. E. Milhau made some verbal remarks on pills coated with gelatin and honey, by the new process of Cauhape & Co., which he deemed a great improvement on sugar coating, as the pills need not be dried before coating and the latter was much thinner than sugar coating.

Mr. Hirsh read a paper on Glyconin (?) a compound of glycerin and yelk of egg; and another on an indelible anilin ink.

Mr. Taylor moved that the Association adjourn to meet on board the boat, (an excursion on Lake Michigan having been planned for the afternoon).

Mr. Menninger hoped the business would be transacted now, as many members would go on the afternoon trains East and South.

The Business Committee moved that when the Association adjourns it adjourns to meet in Baltimore, the second Monday of September, 1869, at 3 o'clock, P. M., which was agreed to.

Mr. Procter, from the Nominating Committee, reported the name of Prof. J. Faris Moore, of Baltimore, for Local Secretary, and a ballot deposited by the President, on motion of Dr. Squibb, effected his election.

A paper by Mr. Hoagland was read by title and referred.

All queries remaining unanswered and not otherwise disposed of were directed to be dropped.

Mr. Menninger said it would be impossible for the Committee on Specimens to make a full Report at present. The Chairman, Mr. Fuller, is actively engaged, and the sub-reports were ready, but the general report will have to be handed to the Executive Committee when completed.

On motion this course was allowed, and the Committee duly authorized.

Mr. Colcord now called attention to a new kind of wooden pill boxes, made with great skill and neatness by glueing two varieties of wood together cross-grained, so as to make them strong whilst very thin and quite smooth and tight.

The minutes of the session were now read and approved.

The Association then adjourned to meet in Baltimore, on the second Tuesday of September, 1870, at 3 o'clock P. M.

## ON THE NOMENCLATURE AND SOME DEFINITIONS IN THE MATERIA MEDICA LIST U.S.P.

By John M. Maisch.

If we compare our present Pharmacopœia with former editions of the same work, it is gratifying to notice the evident progress as manifested in the processes of the numerous pharmacial and chemical preparations. The list of materia medica, as far as the vegetable products are concerned, is a well selected enumeration of those in general use in this country, and comprises also such indigenous drugs as are used in some localities or deserve the notice and investigation of the physician and pharmacist.

The nomenclature adopted in our Pharmacopœia is the same which had been used by the three Pharmacopœias formerly in use in Great Britain and Ireland; the generic or, in a few instances, the specific botanical name is given, and this is then explained to mean a certain part of the plant. In those cases where our Pharmacopœia recognizes as officinal two different parts of the same plant, the name thereof is usually given, and this is preceded by the botanical name in the genitive case. The officinal names are arranged in alphabetical order, and consequently articles which, at least as far as their pharmacognostical relations are concerned, ought to be in close juxtaposition, may be widely separated from each other, as for instance Krameria and Rubus, Cimicifuga and Helleborus, Buchu and Uva ursi, Hyoscyamus and Stramonium, Prunus Virginiana and Sassafras, Anthemis and Matricaria, &c.; on the other hand, drugs which have no external resemblance are placed side by side merely because they are received from the same plant, as the roots and leaves of aconite and belladonna, the leaves and seed of stramonium, &c.

Aside from this consideration, such a system universally adopted, would be productive of mistakes, frequently very serious, if a prescription written in one country would be put up in another, as is now so frequently the case with the increased facilities of travel. Aconitum may mean the leaves in one country, while in another the tubers only are recognized as officinal. Conium may stand for the fruit in one place, while another might have the herb officinal under the same name; stramonium might be the term for the seeds or the leaves in two adjoining countries.

Another source of mistakes, if our system of nomenclature was generally followed, would be found in the fact that in different countries occasionally two different parts of two different species of the same genus are employed medicinally. If fructus rubi idæi of continental Europe was officinal as Rubus, the syrupus rubi of Europe would then be totally different from the preparation officinal with us under that name.

For these considerations, the writer is personally in favor of designating by the nomenclature not only the officinal plant, but likewise the part of that plant, and moreover to give precedence to the latter, by saying radix belladonnæ, folium aconiti, fructus conii, semen stramonii, &c.

While I regard such a system of nomenclature as by far preferable to the one now in use in our Pharmacopœia, I am not prepared to advocate its adoption in the next revised edition, but believe that in consequence of the frequent intercourse with Europe the time has arrived, when discussions on this subject ought to be invited. The fact that a new European Pharmacopœia, that of Austria, has adopted the system to which we still adhere, may, I judge, be merely regarded as an experiment, which sooner or later will be again abandoned.

Our Pharmacopœia defines in a few words the meaning of the names of the officinal drugs by stating the officinal part and giving the full botanical name of the plant. The terms employed for designating these officinal parts are in some cases erroneous, while in others there appears to be a want of system, a lack of uniformity, which would seem to call for a revision of these terms. Without pretending or intending to exhaust the subject, I take the liberty to point out the most prominent of these errors and inconsistencies, and likewise to notice some observations made within the last ten years which will necessitate a change in the wording of some definitions.

At the meeting of the American Pharmaceutical Association in 1867, this subject incidentally came up for discussion with regard to the terms root and rhizome as employed by the pharmacopœia. From this discussion it would appear that rhizomes with the attached rootlets, the latter predominating, are called roots, while the term rhizome designates either that part alone,

or the two together, the roots occupying the smaller bulk. The term rhizome is used eleven times in our Pharmacopœia, and always in consonance with this rule. Calamus, curcuma, iris florentina, iris versicolor, podophyllum, sanguinaria, veratrum album and zingiber, occur in commerce mostly entirely destitute of roots; while geranium and veratrum viride usually have the rootlets attached, and filix mas, besides the small adventitious roots, is covered with the base of the stipes closely overlapping each other. Among those drugs which the pharmacopœia defines as roots, we meet tormentilla in the market almost or entirely free from rootlets; cimicifuga, helleborus, hydrastis, leptandra and some others have large rhizomes and small roots as compared with the size and bulk of the former. Goldthread, though defined as the root of Coptis trifolia, always consists of the entire plant, which, as met with in commerce, has many leaves and but few small rootlets, the underground portion consisting mainly of the long golden yellow thread-like rhizome.

Jalap has a globular rootstock entirely free from leaf scars, and below suddenly contracted into one or sometimes two long, rather thin, somewhat branching roots, which in the commercial article have been almost completely removed. Several stems are produced which often form long runners and are then beset with smaller, more oblong tubers, which otherwise are of the same structure as the main one; this occasionally sends off branches, which again swell into tubers. From this description, which is taken from Flückiger's Pharmakognosie, it is very apparent that jalap must indeed be regarded as a tuber and not as a root.

Aconitum napellus grows from a small napiform tuber which produces one or more short branches, the last nodes of which enlarge to tubers of the same shape; in commerce we frequently find two or three still united, or if separate, the very short rhizomes are usually attached to some, or at least the scars are visible where the rhizomes have become detached.

The term *corm* is sometimes made to include almost all forms of short and thick underground stems and buds, except the foliaceous and scaly bulb; but the true scientific definition makes it a solid bulb, that is a plantiparous bud with a con-

tracted axis and a fleshy leaf. If this is admitted, the officinal portion of colchicum and arum are not corms, but tubers.

The development of the new tubers of colchicum takes place in early summer; the short underground stem flowers late in the fall; its leaves are developed the following spring, and soon afterwards its lowest internode becomes fleshy and thickened and produces the succeeding autumn again a short branch, on which the flower is borne. (*Flückiger's Pharmakognosie*, 181).

The same process requires a much shorter time with Arum triphyllum. Immediately after the flowering period in the spring, a number of buds are produced upon the tuber which soon develop into short rhizomes of about the thickness of a thin quill; the last (several?) internode then begins to swell and assume a depressed globular shape, from the upper half of which adventitious roots are formed, when the rhizome gradually dies, leaving the newly formed tubers separate, and the apex of each with the rudimentary bud for the overground stem which is developed the succeeding year. A few weeks after flowering, the short-lived rhizomes and the new tubers may, in rich soil, be dug up in every phase of development and decay.

The Pharmacopœia states American Senna to be the *leaves* of Cassia marilandica. Though placed in the primary list, I have been unable to find it in our commerce for years past; but what I did see, fifteen and more years ago, consisted correctly of the *leaflets* only, and was then a much cleaner drug than Alexandria senna.

Though never found in our commerce, our Pharmacopœia very properly ordered the leaves only of Nepeta cataria, and imposes upon the pharmacist the trouble of garbling the commercial article. With the same propriety ought to have been directed, instead of the herbs, the leaves of Mentha piperita and viridis, Mellissa officinalis, Marrubium vulgare, Hedeoma pulegioides and probably some others.

Instead of the herb and flowers, the tops and leaves ought to be directed of Achillea millefolium, as is very properly the case of absinthium and eupatorium, though both are usually met in our commerce intermixed with the stems.

Rosmarinus is defined as the tops, while the commercial article consists of the leaves of R. officinalis.

Among the drugs derived from the natural order Compositæ, we have flowers with the officinal names of Anthemis, Matricaria, Arnica and Carthamus. The first two consist of the entire heads, the third is composed of the heads from which frequently the involucre has been removed, and the last is merely the florets, or rather the corollas of the individual flowers.

The fruits figure in our Pharmacopœia under the names of fruit, unripe fruit, dried fruit, fruit deprived of the rind, preserved fruit, unripe capsule, ripe capsule, unripe berry, ripe berry and perhaps strobile. I am inclined in favor of keeping aloof in our Pharmacopœia from the quarrels of botanists in regard to the adoption and the precise meaning of certain terms, and in this instance to define all drugs of this class as the *fruits*, leaving the use of the other terms for commentaries and commentators. If the Pharmacopœia, however, chooses to adopt a certain botanical terminology for defining the officinal fruits, the system ought to be carried out. We would then have to place capsicum, uva passa, diospyros and colocynthis amongst the berries, and cardamomum amongst the capsules; prunum and rhus glabrum would have to be called drupes; a name (cremocarp or diakene) would have to be adopted for the officinal fruits of umbelliferæ, and juniperus and ficus would have to receive names, a courtesy accorded to hops, with which they agree in the fact of not being true fruits.

It would also become necessary to adopt for cassia fistula one of the names proposed for the cassia fruits, since they evidently differ from the ordinary legume by their transverse partitions and their indehiscence. Tamarinds always consist of the fruit entirely deprived of the pericarp, fragments of which are sometimes present merely as an accidental admixture. Hordeum is a fruit, not seed, decorticated to such an extent that the embryo is removed and merely the albumen remains with a portion of the integuments of the fruit and seed in the one-sided groove.

After the beautiful researches of Tulasne, (Annal. des Sciences Nat. Botan. xx, 1853), it seems decidedly wrong to define ergot as the deceased seed of rye, while in reality it is a fungus (Claviceps purpurea, Tul.), in a certain state of development growing from the diseased ovary.

The term *kernel* as employed by the Pharmacopœia for almonds and nutmegs is good as far as it goes. Nutmeg consists simply of the albumen enclosing the small embryo of Myristica moschata. But almonds, as our Pharmacopœia orders (but not defines) them, evidently mean the seeds; for in Mistura and Syrupus amygdalæ it is expressly directed to blanch them, (this direction is not contained in the formula for extr. pruni virg. fluid), and the object of blanching is merely to remove the seed coverings; hence it is either unnecessary to direct the blanching of almonds, or by the term amygdalus the Pharmacopœia means the seed and not the kernel, which latter is exalbuminous and consists of the embryo only.

The term juice as used by our Pharmacopœia is a very convenient one, but does not convey any definite idea; if we place a few of these so-called juices side by side, as for instance limonis succus, aloe, manna, acacia, copaiba, ammoniacum, opium and guaiaci resina, their properties make it very apparent that we have before us a heterogenous collection. The juice proper of a plant is an aqueous liquid, holding inorganic salts and various organic compounds in solution, and will, perhaps in all cases, when evaporated spontaneously or by means of artificial heat, produce a mass, aloe and kino for instance, in appearance resembling and in point of fact identical with the extracts. Opium, scammonium, lactucarium and probably some of the gum resins are not obtained from what is understood by *the juice* of the respective plants, but from the liquid contained in peculiar vessels, the milk vessels; this milk-juice, the physiological function of which is not at all understood, is of a different composition from the true juice, and usually congeals very readily on exposure to the air.

Guaiac resin is a secretion of the tree, stored away in the heartwood, and has no connection with the juice. Recent investigations have shown that the gums, some gum resins, and probably manna, some volatile oils and resins are generated by the metamorphosis, the deorganization of the vegetable cells, and therefore constitute a retroformation of the insoluble tissues into soluble compounds.

It is plainly wrong to define by the same name substances

so different in origin, and it would probably be conducive of a better understanding and of clear ideas, if they were defined in accordance with their chemical composition as gums, gum-resins, oleoresins and resins; and as juice and milk-juice in those few instances only in which the composition is more complex, and the drugs are really the unaltered, the solidified or inspissated physiological liquid.

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## ON CAMPBELL'S METHOD OF PERCOLATION.

Editor American Journal of Pharmacy.

*Dear Sir:*—Having for some time been in the habit of preparing my own fluid extracts, and having with some success experimented outside the strict requirements of the Pharmacopœia, I was favorably impressed with the theory set forth in the Journal for Sept., by Mr. Samuel Campbell. But while my experiments have not been extended enough to justify me fully in opposing a theory advanced by so competent an authority and apparently based on thorough trial, yet I am induced, considering the importance of the subject, to question the correctness of some of Mr. Campbell's conclusions.

My first experiment was with the bark of Prun. Virg., wherein I followed Mr. C's formula, using equal parts of pure glycerin and water, reducing the bark to a powder "moderately coarse." I found, however, that 16 ounces of the menstruum were required simply to *dampen* the drug, leaving no "remainder" to pour into the percolator. Thus dampened, the drug was packed firmly in a conical percolator and allowed to macerate four days, at the end of which time I commenced the displacing process, carefully arranging the displacing liquid (dilute alcohol)* by means of an inverted bottle in the familiar way, so as merely to compensate for the percolation, thereby almost totally obviating any admixture of menstruum, and displacing liquid during the process, in my opinion a very important precaution. In twenty-four hours there had passed 16 ounces of the extract, of a fine deep color, possessing the properties of the bark in a higher degree than any commercial preparation I had ever seen.

* This is a misunderstanding of Mr. Campbell, as he does not direct an alcoholic menstruum for wild cherr fluid extract.

But on continuing the process I obtained 4 ounces more of nearly as deep a color, and from all appearances having fully the strength of the present standard article of the U. S. P. The drug was now thoroughly exhausted and tasteless, but in exhaustion had yielded 20 ounces of extract. The process repeated with the employment of some menstruum heated previous to mixing with the bark to about 200° F., yielded a like result, somewhat richer, apparently, in hydrocyanic acid, owing probably to the more intense reaction of the warm menstruum with the amygdalin of the bark. In both cases I *failed to exhaust* 16 ounces of the drug in 16 ounces of the menstruum.

My next attempt was with ergot, which I treated with a "hydro-alcoholic" menstruum, obtaining somewhat better results, *i. e.* after displacing 16 ounces of extract from 16 ounces of the powder (moderately coarse) I obtained a further quantity of about 2 ounces, certainly, however, too strongly charged with the recognizable principles of the drug to be inert or useless.

During the progress of these experiments and others yet incomplete, I have been led to think that a quantity of any menstruum sufficient *only* to dampen is *insufficient* to dissolve all the extractive matter of a drug, and consequently fails to exhaust it when displaced. It is apparent at once that a great difference exists in the absorbing power of different substances to be treated; that, for instance, the quantity of liquid that would convert one ounce of powdered blood-root or opium into a pasty or creamy consistence, would render an ounce of powdered digitalis, senna or cinchona, only very slightly damp. I can conceive that when the menstruum thoroughly saturates the drug so as to cover it when properly packed in the percolator, careful displacement would result in almost completely exhausting it after due maceration. But when 16 ounces of a given menstruum fall short of uniformly and completely moistening 16 ounces of the drug by from 2 to 4 ounces, it must surely absorb to saturation from the displacing liquid, and the first flow of 16 ounces must leave behind much that is useful, and therefore falls short of our idea of a fluid extract.

That a fluid extract of wild cherry bark or of cinchona of much greater strength and better quality than the officinal preparation, of which at most one and a quarter ounces shall

represent one ounce of the crude drug, I will testify (from actual proof) can be made by Mr. Campbell's process. But that we can in all cases by that process reach the definite results required by our standard I am not prepared to admit.

I hope, however, that the subject may be more fully discussed; hope in fact that its "thorough exhaustion" may result in confirming Mr. Campbell's views and refuting my own doubts.

H. P. REYNOLDS.

*Plainfield, N. J.*, Sept. 29, 1869.

NOTE BY EDITOR.—Mr. Campbell, in stating his process in the September number, does not make his meaning clear as regards moistening the powder. We also think he has erred in directing the cork to be inserted *before* the air has been expelled by the descending fluid after pouring on the menstruum. When a pound of powder is moistened and properly packed in a funnel and the balance of the pint of menstruum poured on it, the first portion of the latter, descending gradually from layer to layer, carries a large part of the more soluble constituents with it to the lower part of the funnel, leaving the last portion of the menstruum much less to extract. When, therefore, the displacing liquid is added after four days maceration, the strength of the absorbed liquid in the top layer of the powder is very much less than if the powder and menstruum had been uniformly mixed and left to macerate for four days, and consequently, if any of it gets admixed with the displacing liquid it will occasion a less final deficiency. Theoretically it is safer to use only about 14 fluidounces of menstruum for each 16 troyounces of ingredients for maceration, because as the extracted matter occupies space, it follows that the original 16 fluidounces of menstruum cannot possibly be all included in the 16 fluidounces of finished fluid extract.

The quantity of fluid required to moisten a powder for percolation is only that quantity that is necessary to slightly soften the tissues so as to facilitate packing and *invite* the descent of the second portion of liquid. This portion is not always the same, but it is rarely necessary to make it more than one-fourth or one-third of the pint when a pound of powder is treated.

W. P. JR.

## TO PREVENT THE BUMPING OF LIQUIDS.

Editor American Journal of Pharmacy.

*Dear Sir:*—The bumping of liquids when submitted to distillation has often annoyed me, and I have sought for means to prevent it in compendiums and journals on Chemistry and Technology, but without finding entirely reliable ones. When I saw the article of Hugo Müller on this subject in the last number of your valuable journal, I conceived at once, supported by my

own experience, that his proposition to run a constant stream of some gas through the boiling liquid would answer, at least in most cases. If you work with acids, however, such as nitric, sulphuric, or with other corrosive liquids, chloride of antimony, etc., where the bumping is sometimes so strong that your cork or india-rubber stopper, by which you fit your glass tube into the tubulus of the retort, will not resist the action of the hot vapors, and consequently the whole arrangement will not be applicable. There is another objection: the operation of condensation is certainly rendered more difficult, where a permanent gas is mixed with the vapors, consequently an imperfect condensation and an escape of some, perhaps not unimportant, part of the liquid is to be feared.

In distilling acids and other liquids I used to proceed in the following manner, by far in the most cases with perfectly satisfactory results; once or twice, however, I cannot help stating, the result has been unaccountably dissatisfactory.

The end of an ordinary glass pipe of about $\frac{1}{8}$ inch opening is shut at one end and this end bent into a little hook. The glass pipe is then cut exactly so long as to reach from the bottom of a glass retort to within $\frac{1}{2}$ inch or an inch of the stopper of the tubulus. By means of the hook and a piece of twine or a little hook of thin wire this glass pipe is placed into the retort, the open end at the bottom, and the retort can be filled, or the retort is filled first, and the glass pipe entered afterwards, which will probably be preferable. If the liquid now is warmed, the air in the glass pipe is expanded, and constantly bubbles out at the open end, and if the boiling point is reached, vapors of the tension of the atmosphere are created at the spot where the glass pipe stands on the bottom of the retort, and the boiling continues regularly and quietly in far the most cases for days. If the retort is to be refilled, the glass pipe is to be taken out, in order to empty it, and then is replaced again, also when the operation is not finished the first day, but the retort cooled and operation resumed next morning.

You would greatly oblige me by giving the above a space in your valuable journal. Yours, respectfully,

THEO. SCHUMANN,

*Newark, N. J.*, Sept. 25, 1869. *Apothecary.*

## ON THE PROCESS FOR PREPARING JAMES' POWDER.

By Michael Donovan, Esq.

Honorary Member of the College of Pharmacy of Philadelphia, etc., etc.

More than two centuries ago a medicine was in repute made by burning shavings of hartshorn or of bones along with sulphuret of antimony, and continually raking or stirring them together until the sulphur was burnt off, and the powder had become light gray or ash-colored. It was known as Lile's and Schawanberg's fever powder, and was much used about the middle of the seventeenth century.

In 1746 Dr. Robert James, a physician of talent and eminent learning, finding the powder to be an excellent medicine, and having made a trifling alteration in the process of preparing it, secured a right to the exclusive manufacture by a patent. The conditions of obtaining a patent were that the petitioner shall make oath that he is the sole inventor, and that he has deposited in Chancery a true and precise specification of the mode of producing the article for which he seeks the monopoly. But Dr. James was not the sole inventor, nor did his specification disclose his process; nor could the powder, thenceforward called "James' Powder," be prepared by the means which he pretended were sufficient: he conceived that his best security was secrecy. Dr. James, therefore, virtually had no patent right.

For a long series of years nothing was certainly known of the composition of the powder until the investigation was undertaken by Dr. George Pearson, who in 1791 gave an account of it to the Royal Society, in a communication which was published in the "Philosophical Transactions."

A medicine founded on the experiments of Pearson, and intended as a substitute for James' Powder, was introduced into the London Pharmacopœia of 1788 under the name of Pulvis Antimonialis. It was accordingly used by apothecaries as a succedaneum on account of the high price of the real James' powder; but it never obtained the confidence of practitioners; and hence the origin of the adjunct used in prescriptions, *verus*.

Indeed it never deserved their confidence, being, as directed in the Pharmacopœia, an almost inert substance.

Dr. Pearson informs us that all the parcels of James' powder that he had seen would be called white powders, but no two of them were white in the same degree; they had either "a shade of yellow or stone color, and none were perfectly white, or so white as some specimens of Pulvis Antimonialis of the shops. Some parcels had a brassy taste, others no taste. Dr. Pearson having formed a powder from bone-ashes and crude sulphuret of antimony possessed of properties similar in kind to every one of those ascertained to belong to James' powder, with scarcely any difference in the degree of them, considered that they were the same. Beside this synthetic proof, he adduced the evidence of analysis, and made experiments in proof before competent judges. He says, "It is very probable that no degree or duration of fire applied in open or close vessels alone can produce a calx of the same kind as that in James' powder, nor, perhaps can such a powder be composed by fire applied in close vessels to calx of antimony mixed with calcined bone; but if calx of antimony, duly calcined, be mixed with calcined bone, and exposed to air, in a due degree of fire, for a sufficient length of time, and then a still greater degree of fire be applied to it in close vessels, such a compound may be formed as James' powder. . . . No such white powder is formed by a mixture of any calx of antimony and bone ashes, exposed to any degree of fire in close vessels, without previous exposure to fire and air."

Pearson concludes from all his experiments that James' powder consists of phosphate of lime and a peculiar calx of antimony, different from all others, composing a triple compound in the proportion of about 57 parts of calx of antimony and 43 of phosphate of lime, or a double compound of the same elements.

The admitted medical efficacy and the high price of James' powder induced the various colleges of physicians to introduce into their pharmacopœias a process for imitating it. They took for their guide the investigations of Pearson, and dictated formulæ which apparently did not much differ from the prescription of that accomplished physician. This preparation, called Pulvis Antimonialis, proved an utter failure, having neither the com-

position nor the medical effects of the powder of James. In the manipulation of the manufacturers, the chief object seemed to be the production of a powder as white as snow,—the very quality which it ought not to possess if intended to resemble the powder of James, which at that time was always slightly yellow, or cream-colored, or even stone-colored, as we learn from Pearson.

I made a number of trials of the process of the three British Pharmacopœias (1816), but could not obtain the powder white like the Pulvis Antimonialis of the druggists, or like the James's powder then in use. The roasted materials introduced into a skittle-pot, with another inverted, both luted together, were maintained at a white heat in an air-furnace for two hours. When cold, the included matter was found converted into a dense, close-grained, buff-colored mass, as hard as limestone and very heavy. Being again heated to whiteness, it became a deep olive-brown mass, harder than before.

I repeated the process on new materials, heating them similarly in a different air-furnace, and obtained an olive-brown semivitrified mass with dark streaks, harder than the former mass, a small portion of a white enamel appearing on the side of the skittle-pot.

It was plain, therefore, that the heat was too high, and that the use of the air-furnace, originally directed by Pearson, and adopted in all the pharmacopœias, was an error. I therefore repeated the process, and placed the skittle-pot containing the powder in a common fire-grate, heaping coal round and over it. In due time the skittle-pot became red-hot, and in this state it was kept for an hour and a half or two hours. When cold, it was found to be a snow-white powder, covered by a congeries of crystals a quarter of an inch thick. Thus one important fact was ascertained.

On repeating this method several times, and using an iron ladle in a common coal fire, the resulting powder, instead of being uniformly white, proved in some instances to be buff-colored; but occasionally the snow-white powder was obtained. As the failure was not due to the final heating, it must have originated while the materials were in the iron ladle. Various

experiments convinced me that the heating in the ladle is the most important part of the whole process; and at length it became evident that when the heat, accompanied by continued stirring or raking, was maintained until the powder changed from dark brown to a light yellowish-grey, the final heating in a skittle-pot brightened it, or the greater part of it, to a perfect white. The light yellowish-grey color here mentioned will be best understood by comparing it to the dust of a Bath brick, often used for cleaning dinner knives, but a little paler.

But to heat the powder while in the ladle fully to this color, but not beyond it, was the difficulty.

During these experiments I perceived that when the quantities of the two ingredients were as large as ten ounces of each, the resulting powder when taken from the skittle-pot never proved white, but generally dark grey, interspersed with a deep yellow-colored portion. This fact pointed to the conclusion that the ladle was too small for that quantity of materials, that due raking during the heating was impeded, and that the desulphuration was accordingly imperfect. A hemispherical ladle capable of holding a gallon being procured, a charge of ten ounces of each was placed on the fire and continually raked for several hours, at first without any intermission, and at length with short intervals of rest, until the proper color was attained. This matter, being finely powdered, was introduced into a proportionately large skittle pot and exposed to a well-built coal fire in a common grate, and kept red-hot for three hours. When cold, the top portion proved to be a thin cake of dark-colored matter; under that was a small quantity of yellow portion; and the remainder was very nearly snow-white.

On trying so large a charge as sixteen ounces of each ingredient in the large ladle it proved to be unmanageable; the carbon at an early period ignited; the mass softened, collected into dark-colored lumps, which could not be raked notwithstanding much effort. Finding it impracticable, I took out the charge when cold, and being powdered, it was returned into the ladle in four different portions, each of which was separately raked while heating, until the proper color appeared to be attained. The whole of the powder being charged into a very large skittle-

pot, was heated in a well-built and well-supplied fire for several hours. The powder, when cold, was found to be yellow throughout; for the proper proportion between the quantity of matter and the containing iron ladle had not been observed, the necessity of which was thus amply proved. It is a certain fact that a large quantity in a small ladle will never afford a white powder.

By reversing the conditions of the process, that is, by acting with due care on a small quantity of materials in a very large ladle, we are pretty sure of bringing the charge safely through its first stage of danger. Thus when four ounces of hartshorn-shavings and the same weight of sulphuret of antimony were well raked in a ladle of the capacity of a gallon, until the requisite color was attained, and then heated in the skittle-pot for an hour or more in the usual manner, the powder almost always turned out white, generally snow-white, but sometimes with the cream-colored tinge noticed by Pearson. Under the condition of small charges in a very large ladle, the snow-white color was sometimes produced by a very hot fire in fifteen minutes after the skittle-pot had become red-hot, but with a fire not so hot, a much longer time was necessary.

After following up these experiments for some time, I found that much trouble and anxious watching would be saved by raking the bone-shavings, without the sulphuret of antimony, until the ammoniacal fumes, the sulphur, and the extremely fetid gases had been expelled; and making proper allowance in subsequently apportioning the antimony.

Adopting this method, six ounces of calcined hartshorn-shavings mixed with four ounces of sulphuret of antimony were raked over a graduated fire, in my largest ladle, until the powder had assumed the usual yellowish-grey hue. It was then transferred to a small skittle-pot, which, being placed on a stand in a large fire-grate, coals were built round and over it, and a cover applied. The skittle-pot was kept red-hot for six hours. When cold, it was cautiously examined. No part of the partially cohering powder was white; it was almost all dark grey, but much darker towards the top; the portion at the very top was full of particles of metallic antimony, and even small masses

of it which had assumed a somewhat rounded form. The dark grey color of the whole mass seemed to be caused by the intermixture of thousands of minute shining particles of the metal with the phosphate of lime. Round the mouth of the skittle-pot and on its cover was a small accumulation of white powder, some of which was minutely crystallized, and was deposited by the dense white smoke which issued from the skittle-pot every time the cover was removed, and ceased when it was replaced. At the bottom of the skittle-pot was a small quantity of yellow powder. It was remarkable that, although many processes had been conducted in this fire-grate in all respects in the same manner, except that the fire had been maintained for two hours only, the powder had always turned out white, a significant fact which seemed strongly to indicate that the heating had been continued too long, and perhaps too intensely. It also agreed with the two cases already described, in which the intense heat of the furnace during two hours had produced the same injurious effect. It corresponded also with the fact already stated, that a portion which had been adequately raked was rendered perfectly white in the crucible by fifteen minutes' red heat in a strong fire, the same effect not being producible by a weaker heat for a much greater length of time.

In due time, after finishing a quantity of my James' powder, I was anxious to know something of its medical effects, and with this view gave it to several friends for trial, and used it also in my own person. But in most of the cases tried, the powder had a rough action, producing sickness and sometimes vomiting. I had used equal quantities of bone-ashes and sulphuret of antimony as directed by Pearson, and followed in the Pharmacopœias, but this proved to be too much of the sulphuret. I therefore made new trials of the process with half the quantity of antimony. In these proportions the difficulty and uncertainty of the process were greatly diminished; the powder almost always turned out snow-white, and when used as a medicine in due doses was for the most part easily borne in the *primæ viæ*. But it is very probable that Dr. James employed a less ratio of sulphuret of antimony even than one-half; he sometimes prescribed his powder in doses of ten grains every six hours, and even

twenty grains at once, without much effect on the stomach, bowels, or skin.

There is a slight objection to conducting the process of roasting in an iron ladle, and raking with an iron rake; minute particles of protoxide of iron are found in the resulting powder, very small in quantity, but unpleasant in appearance. This may be remedied by substituting an earthen dish, and it was such a vessel that Pearson used in his experiments; but the iron ladle is far more convenient.

I believe that James's powder may be prepared in the following manner:—Let any quantity, say eight ounces, of bone-shavings be heated in an earthenware dish or an iron ladle over a moderate fire, and frequently stirred or raked during its incineration. When burnt to a black powder and ammoniacal fumes are no longer perceptible, let four ounces of levigated sulphuret of antimony be thrown in, and let stirring with an iron rod from the bottom and all parts be immediately commenced and rapidly continued, so that the sulphureous fumes shall have a *free* issue and be no longer discoverable. This is most important.

During the desulphuration the heat should be kept as low as may be sufficient to cause the discharge of the vapor. In the dark, the powder should show a thin, blue flame, as faint as possible; but as often as this flame disappears, the heat should be gently raised until it again appear. But neither the bottom of the ladle nor the powder should be allowed to become red-hot while vapors are discharged, or while there is blue flame from the burning sulphur. At length even a higher heat will not expel any more sulphur. During this roasting, innumerable bright spiculæ of metallic antimony will sparkle through the powder. The ladle and its contents may be allowed to become red-hot for two or three minutes, the raking being continued. If the process has been rightly conducted, the powder, at this stage, will have assumed the color of the dust of Bath brick.

The contents of the ladle should now be powdered, sifted, transferred to a skittle-pot, its cover laid on and the whole placed on a stand in the fire-grate, and lumps of coal are to be built round and above it in such a way as to permit a free

current of air to pass through. The skittle-pot and its contents will thus be brought to a uniform bright red-heat, which may be maintained at that degree for about an hour, more or less, according to the quantity. The skittle-pot is then to be taken from the fire, and should the powder prove to be pure white, except perhaps a thin layer at the top, it only requires to be reduced to the finest powder in an earthen mortar, and sifted through a fine silk sieve. Should the powder not prove white, it may be returned to the skittle-pot, placed in the fire as before, and continued in a state of ignition for half an hour, according to the judgment of the operator.

In the first part of the process, the sulphuret of antimony is slowly decomposed; its sulphur burns, and exhales in the state of sulphurous acid. The antimony, now insulated, appears in small brilliant spiculæ, which, as the heat increases, gradually disappear. In the second part of the process, when the roasted matter is heated in the skittle-pot, the antimony, while in the state of vapor, combines with oxygen, and is converted into protoxide, part of which crystallizes in the upper part of the skittle-pot, or escapes as a thick, white smoke. The heat increasing, the protoxide is converted into antimoniate of antimony, which remains mixed or combined with the phosphate of lime.

If the heat be raised much above that of a good coal fire in a common grate, the mass will slightly cohere, and in some parts will become yellowish and vitreous. If the heat be still higher, as that of an air-furnace, the powder will change to an olive-brown mass as hard as stone.

All the time the powder is in the skittle-pot and very hot, protoxide of antimony is escaping or crystallizing on the cover, and hence the difference discoverable by analysis, and by the medical effects of different parcels of James's powder. It therefore becomes an important and difficult question, what is the criterion by which the completion of the process is to be judged? I know of no other than this, that when the powder is white it is fit for use; any greater or longer-continued heat, I believe to be injurious. It may not always happen that the whole charge will prove white; when it does not, the whitest parts are to be separated, and, if worth the trouble, the remainder may be

slightly calcined again. But should the first charge, after being duly heated, prove dark colored throughout, it cannot be improved and may be rejected.

Before concluding this paper, I may mention some facts relative to James's powder which were communicated to me a great many years ago by a very old gentleman who had been an apothecary in Dublin, Mr. William Speer, the clever inventor of a well-known hydrometer for ascertaining the strength of excisable spirituous liquors. It was as follows :—

In 1758 Dr. Anthony Relhan, a Fellow of King and Queen's College of Physicians in Ireland, practised in Dublin, and was one of the physicians of Mercer's Hospital. The Fellows refused to meet him on account of his employing James's powder in his practice, although the decree against antimonials by the French College of Physicians had been long before repealed. In consequence, he wrote to Dr. James, who advised him to go to London to practice, which he did. Becoming intimate with Dr. James, the latter, during several interviews, communicated the process practically to him, his patent-right having expired. In 1760, Relhan returned to Dublin, and being acquainted with Mr. Ducros, an eminent apothecary, then residing in William Street, he communicated the process to him confidentially. Ducros prepared the powder in presence of Relhan, and it was repeatedly administered in Mercer's Hospital and other places, with exactly the effects of James's powder. Mr. Speer was apprentice to Mr. Ducros, and on his death in 1768 succeeded to his business. The widow gave up to Mr. Speer a MS. book containing the account of the Pulvis Jacobi, which he retained ever after. The following is the process :—"Take one pound of hartshorn-shavings; boil them in a large quantity of water, and dry them by a slow fire. Rub them to a fine powder. Then put an equal weight of the hartshorn and powdered crude antimony into a crucible, and set it on a moderate fire, stirring it with a long rod of iron for six hours or as long as it smokes."

I have repeated the above process several times, but never could produce the snow-white powder with which we are familiar; the resulting color being generally that of Bath brick dust, already described, but on a few occasions paler. Yet the state-

men' of Mr. Speer is I think supported by facts. Dr. Pearson says, "It is probable that this powder was made for several years with merely the heat necessary to carry off the sulphur and calcine the bone, in an open vessel, and consequently it was of a light clay or ash color. Its property of turning white in a greater degree of fire appears to have been a subsequent discovery." But in this greater degree of fire the powder discharges copious fumes of protoxide of antimony, and becomes less active as a medicine; and at length assuming the hard, vitreous state, it loses all medical power. On one occasion, when I had obtained the powder from the iron ladle paler than usual, I took several doses of it without any striking effect, which proves at least that, in this state, it is innoxious; its taste was most disagreeable, whereas the white powder is tasteless. I imagine that in this form the powder would prove to be in its most active state; that it was in this form that Lile's and Schawanberg's powder obtained its celebrity; and that the subsequent process of whitening it by fire deteriorates its medical effects more or less according to its degree and continuance. But it is of little use to insist on this part of the subject in the present day. If the whitening process in the skittle-pot were relinquished, and the light ash-colored powder from the ladle were accepted, we should probably have an efficacious medicine of uniform or little-varying strength.—*Lond. Pharm. Journ.*, Sept., 1869.

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## ON THE MANUFACTURE OF CHLORINE BY MEANS OF PERPETUALLY-REGENERATED MANGANITE OF CALCIUM.

Read before the British Association, Exeter meeting, Section B.

By Walter Weldon, F.C.S.

Since the last meeting of the British Association, chlorine has begun to be manufactured extensively by a process which depends on the production and perpetual regeneration of a compound no mention of which, so far as I can find, as yet exists in chemical literature. As this process, besides thus producing and continually re-producing what I believe to be a new compound, reduces, by fully 80 per cent., the principal item in the

cost of the manufacture of chlorine, greatly increases the quantity of chlorine which can be practically obtained from a given quantity of hydrochloric acid, and, moreover, enables the manufacture of chlorine to be carried on without the production of any offensive residue, I have ventured to think that a very brief account of it might not be without interest to this Section.

What has hitherto been the ordinary process of manufacturing chlorine consists simply in digesting with hydrochloric acid ores containing peroxide of manganese. The reaction which takes place, besides liberating chlorine, produces chloride of manganese, which remains behind a solution after the chlorine has gone off, and has hitherto been usually thrown away. There have been proposed and tried a great number of processes for transforming this chloride into peroxide for use over again; but the only one of them which has met with the slightest measure of practical success, prior to that which is the subject of this paper, is the one which is known, from the name of its inventor, as Dunlop's process. Dunlop's process decomposes the chloride of manganese by heating its solution, under a pressure of from two to four atmospheres, with milk of carbonate of lime, and then, in the dry way, transforms the resulting carbonate of manganese into a mixture or compound of two equivalents of peroxide with one equivalent of protoxide, by subjecting it for forty-eight hours to the action of air at a temperature of about 600° Fahr. The product of Dunlops's process is a sufficiently satisfactory one, containing about 72 per cent. of $MnO_2$; but the process requires a very formidable amount of apparatus, and, in this and other ways, is so costly that its use has never been extended beyond a single firm of manufacturers.

Three years ago I began to endeavor to work out the idea of decomposing, by either lime or magnesia, the chloride of manganese in the residual liquors of the chlorine manufacture, and then blowing air through the resulting mixture of hydrated protoxide of manganese with solution of chloride of calcium, or of chloride of magnesium, as the case might be. I took for granted that one-half of the protoxide of manganese so treated was the largest proportion of it that could thereby be converted into $MnO_2$—in other words, that one could obtain only sesquioxide

by this method; but it was soon found that, when using lime to decompose the chloride of manganese, considerably more than half the protoxide operated upon was frequently converted into $MnO_2$. It was found, eventually, that more than half the protoxide was thus peroxidised only when more lime was used than simply the quantity necessary to decompose the chloride of manganese, and when what was treated with air was thus a mixture of protoxide of manganese and lime; and it was also found that in all such cases there was a definite relation between the quantity of lime associated with the protoxide of manganese and the quantity of the protoxide, in excess of half, which became peroxidised. This led to the discovery that, whereas when protoxide of manganese by itself is treated with air in the wet way, one-half is the maximum proportion of it which can thereby be converted into $MnO_2$, the association of a certain proportion of lime with the protoxide so treated will enable the whole of it to become converted into $MnO_2$. It is to this fact, together with that of the much greater rapidity with which protoxide of manganese can be peroxidised by treatment with air in the wet way when lime is present than when lime is not present, that the practical success of the new method of manufacturing chlorine is mainly due.

The action of lime in increasing the proportion of protoxide of manganese which can be peroxidised by treatment with air in the wet way, evidently consists in the lime substituting itself for part of the protoxide which, when protoxide of manganese not having any other basic substance associated with it is treated with air in the wet way, does not undergo peroxidation. It would seem that the production of $MnO_2$ in the wet way by direct combination between hydrated MnO and atmospheric oxygen absolutely requires the presence of a base with which the $MnO_2$ can combine as it forms. When protoxide of manganese not having any other basic substance associated with it is treated with air in the wet way, a part of the protoxide itself has to act as the required base; and this is the reason why, in that case, not more than half of the protoxide can become peroxidised, the other half being required to combine as MnO with the half which becomes converted into $MnO_2$. When, however, the protoxide

of manganese which is treated with air in the wet way has lime associated with it, the $MnO_2$ which forms (or part of it, according to the proportion of lime present) combines with CaO instead of with MnO, thus leaving free to undergo peroxidation that part of the MnO which, but for the presence of the CaO, this $MnO_2$ must have been combined with, and which would thus have got locked up in a state in which it would have been incapable of being peroxidised, at least in the wet way and by air alone. Hence, the presence of enough lime to take the place of that half of the protoxide which, if no lime were present, would have to go into combination as base, and also to supply enough base for that half itself to combine with after undergoing peroxidation, will enable the whole of the MnO operated upon to be raised to the state of $MnO_2$. The minimum quantity of lime which is enough for this purpose is an equivalent for each equivalent of MnO operated upon, or the quantity necessary to supply an equivalent of lime to all the $MnO_2$ which can be produced by the peroxidation of all the MnO.

By treating with air, then, a mixture of protoxide of manganese and lime suspended either in water or in solution of chloride of calcium, there is formed a compound containing $MnO_2$ and CaO, in the proportion of an equivalent of one to an equivalent of the other. This compound may be regarded as sesquioxide of manganese, or $Mn_2O_3$, the MnO in which is replaced by CaO. I call it manganite of calcium, and I believe it to be a new compound. Gorgrew, in 1852, described a compound which he called manganite of calcium; but his compound contained five equivalents of $MnO_2$ per equivalent of CaO, and the CaO in it was so feebly combined that it readily decomposed chloride of manganese. My compound contains only one equivalent of $MnO_2$ per equivalent of CaO, and has no action upon salts of manganese.

This compound has now been produced and re-produced to the extent of some hundreds of tons. The process of producing it and applying it to the manufacture of chlorine is conducted as follows:—The residual liquor which remains after a charge of manganite has reacted upon hydrochloric acid in any suitable still is run from the still into a well or other receptacle, in which

it is treated with carbonate of lime, to neutralise any free acid and to decompose any sesquichloride of iron or sesquichloride of aluminium which may be contained in it. The neutralised liquor is then pumped up into an elevated cistern, in which it is left at rest for a few hours, in order that it may deposit certain solid matters which it now holds in suspension. The most abundant of these is usually sulphate of calcium, due to the somewhat considerable quantity of sulphuric acid which is nearly always contained in the hydrochloric acid produced in alkali works; but there are also small quantities of sesquioxide of iron, derived from the sesquichloride of iron in the hydrochloric acid, and sometimes partly from the lime used in the process, and larger or smaller quantities of alumina and silica, due to the lime. These impurities having deposited, the supernatant liquor, which is a mixed solution of chloride of manganese and chloride of calcium, and is now quite clear, and of a beautiful rose-color, is run off into another vessel, where there is added to it the quantity of lime necessary to decompose the chloride of manganese in it, and nearly an equivalent more. A blast of air is then injected into the resulting mixture, and what was at first a perfectly white mud (all the manganese in which was in the state MnO) soon becomes a very black mud, nearly all the manganese in which is in the state of $MnO_2$. This is then allowed to settle for about twelve hours, at the end of which time it has separated into a denser black mud and a supernatant, clear solution of chloride of calcium. This solution of chloride of calcium having been drawn off, what remains is ready for use in the still. It is used as mud, without drying, being conveyed to the still by pipes, and entering by a hydraulic lute. In the still it meets with hydrochloric acid, from which it liberates chlorine, at the same time re-producing exactly such a residual solution as was commenced with. With this solution, the round of operations is recommenced, and so on, over and over again, continually. The samples I exhibit are portions of a charge of manganese which, at the works of Messrs. J. C. Gamble and Sons, of St. Helen's,—where this process has been worked out, by the liberal co-operation of Lieut. Colonel Gamble, the proprietor of those works, and the invaluable assistance of Mr. Bramwell, the very

able manager of them,—has actually generated chlorine from which bleaching-powder has been made, something like fifty successive times.

Hitherto, the principal item in the cost of chlorine has been that for native peroxide of manganese. Last year, in Great Britain, France, Belgium, and Germany together, there were produced about 120,000 tons of bleaching-powder, which cost, on an average, for native oxide of manganese, not much, if any less than £5 per ton. My process substitutes of this cost for native oxide of manganese a cost for the regeneration of manganite of calcium not exceeding fifteen shillings per ton of bleaching-powder, being about ten shillings for lime, one shilling for steam, one shilling for wages, and two shillings for interest and wear and tear. Moreover, whereas hitherto, at least in this country, and in all but an extremely few exceptional cases, the production of a ton of bleaching powder has required the acid from about 75 cwts. of salt: my compound yields chlorine enough for a ton of bleaching-powder from the acid from less than 45 cwts. of salt. This larger yield of chlorine is mainly due to the artificial manganite being so easily soluble that it can very readily be caused to neutralize from 95 to 99 per cent. of the acid employed, which is a very much larger proportion than can be neutralised when working with manganese ores. A third very important advantage of the new process over the old one consists in this—that, whereas the immense quantities of acid which escapes neutralization in the old process are usually—and have almost necessarily to be—sent into the rivers as free acid, the only product of the new process which has to be thrown away is a perfectly neutral solution of chloride of calcium.

Seeing that manganite of calcium, or $CaMnO_3$, is only of the very same value precisely in respect of the quantity of chlorine which it can liberate from a given quantity of acid as sesquioxide (otherwise manganite of manganese, or $MnMnO_3$), it may be well to explain why it is preferable to produce and re-produce the former rather than the latter. The reasons for this are two. There is, firstly, the obvious reason that, when all the manganese is converted into $MnO_2$, twice as much work is done per given bulk of material operated upon as when only half the

manganese is converted into $MnO_2$; and this, of course, would be a very important consideration, even if the transformation of chloride of manganese into manganite of calcium occupied the same time as its transformation into manganite of manganese. Really, however (and this is the second reason), the former operation, in which all the manganese is converted into $MnO_2$, does not occupy more than one-fifth of the time required for the latter operation, in which only half the manganese is converted into $MnO_2$; and hence, while the manufacture of chlorine by means of perpetually-regenerated manganite of calcium effects the very considerable economy above stated, it is questionable whether chlorine could be manufactured by means of manganite of manganese regenerated by the same method so cheaply as by means of manganese ores.

The length of time which, when protoxide of manganese by itself is treated with air in the wet way, is required for its complete conversion into sesquioxide is very remarkable, and the fact that hydrated protoxide of manganese is somewhat freely soluble, alike in water and in neutral solution of chloride of calcium, would seem to have something to do with it. It is a curious fact that the peroxidation of protoxide of manganese by treatment with air in the wet way is greatly retarded by the presence in the medium in which the protoxide is suspended of any proto-compound of manganese in the state of solution. Thus, in a solution of either chloride or any other proto-salt of manganese, peroxidation will go on only extremely slowly; and solution of the protoxide itself, which will be present until the very end of the operation when protoxide alone is treated with air in the wet way, has the same retarding influence. On the other hand when treating with air a mixture of protoxide of manganese and lime suspended in solution of chloride of calcium, there are formed solutions containing peroxide of manganese, in the presence of which peroxidation goes on with extreme rapidity. All these solutions are more or less deeply colored, solution of the protoxide being without color. I exhibit a sample of one of the colored solutions, called by the workmen "the port-wine solution." The nature of these colored solutions has not yet been fully investigated, but I believe them to consist of

manganite of calcium dissolved in solution of oxychloride of calcium.

I may be permitted to mention, in conclusion, that, while there is every prospect, from the rapidity with which the new process of manufacturing chlorine has been and is being adopted both in this country and on the Continent, that, within a period to be measured only by months, nearly all the chlorine made in the world will be made by it, there is every likelihood that, in nearly all cases, a portion of the hydrochloric acid saved by it will be applied to the recovery of sulphur from alkali-waste. The chief reason why the recovery of sulphur from alkali-waste has been so little practised hitherto is that the manufacturers have considered ir more profitable to use all their acid for the manufacture of bleaching-powder than to use any part of it for the recovery of sulphur; but the process which I have had the honor to describe will enable them to make even more bleaching-powder than they have made hitherto, and yet have enough acid left to permit of their applying to all their alkali-waste the only process for the recovery of sulphur therefrom which as yet has been found practically successful; and I am able to state that this application of a portion of the acid saved by my process will be extensively adopted.—*Chem. News, Sept.* 3, 1869.

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## REGENERATION OF PURE SULPHUR FROM THE RESIDUES OF THE MANUFACTURE OF SODA.

By Max Schaffner.

The author's process, which is worked at Aussig on the Elbe, yields chemically pure sulphur and is superior to that of P. W. Hoffmann and L. Mond, the results of which have only the value of pyrites. The process is divided into three parts: the preparation of the sulphur liquors, decomposition of the same, and preparation of chemically pure sulphur.

For the *preparation of the liquors* the soda residues are heaped up in the air for oxidation; after some time the heaps become heated and polysulphurets are formed, which on further oxidation form some hyposulphites. After several weeks the heaps become yellowish-green in the centre, and are then fit for ex-

traction; the mass is broken up, further exposed to the air for 24 hours, and then exhausted by lixiviation, in three basins of brickwork or iron so that concentrated solutions are obtained. The residues are further oxidized either in ditches 3 feet in width and depth, or better by passing the gases of a chimney, by means of a ventilator, under the false bottom of the exhausting vessels. In the latter case the oxidation is completed in 10 to 12 hours; more hyposulphites are formed than in the ditches and much labor is saved. The chimney gases, consisting mainly of water, carbonic acid and warm air, are well adapted to transform sulphuret of calcium into polysulphuret and hyposulphite. This oxidation may be repeated three or four times, according to the nature of the soda residues. Too long continued oxidation will produce free sulphur and sulphite, finally sulphate. The latter will occasion a loss of sulphur; the free sulphur will be taken up by the concentrated liquors.

The *decomposition of the liquors* is effected in close stone or iron vessels by muriatic acid; $CaOS_2O_2 + HCl$ yield $CaCl + SO_2 + S + HO$, and $2CaS_x + 3SO_2$ yield $2CaOS_2O_2 + S_x$. On adding muriatic acid to the liquor in the first vessel, the polysulphurets are first decomposed with the separation of sulphur and the extrication of sulphuretted hydrogen; more muriatic acid will decompose the hyposulphite, precipitate sulphur and liberate sulphurous acid which is conducted into the liquor of the second vessel, wherein it forms, with the polysulphurets, free sulphur and hyposulphite. The first vessel is heated by injecting steam to drive over all sulphurous acid, the exhausted liquor is drawn off and the sulphur collected, after which the vessel is filled with a new portion of sulphur liquor. Now the decomposition of the liquor in the second vessel is effected in the same way; however, the polysulphurets having been completely converted into hyposulphites, no sulphuretted hydrogen is given off, but sulphurous acid which is conducted into the fresh sulphur liquor in the first vessel. If properly conducted, after the first decomposition, neither sulphuretted hydrogen nor sulphurous acid must escape into the atmosphere. The sulphuret and hyposulphite in the sulphur liquor are estimated by titration, and accordingly the soda residues are oxidized more or less.

*The preparation of pure sulphur* is accomplished in an iron vessel by fusing it under some water with steam under a pressure of 1¼ atmospheres. The adhering chloride of calcium remains in solution, the gypsum is suspended in the water and the addition of some milk of lime neutralizes any free acid, while the excess forms some sulphide of calcium which dissolves any sulphide of arsenic present. This manipulation saves much labor, rendering unneccessary the careful washing, drying and distillation of the sulphur which is obtained free from arsenic. The fused sulphur collecting on the bottom of the kettle is drawn off into moulds.

In this way 60 to 65 per cent. of the sulphur contained in the soda residues is obtained. A hundred weight of sulphur requires 2 to 2¼ cwt. muriatic acid.

Where obtainable, the mother-liquors from the generation of chlorine may be used; they contain manganous and ferric chloride with much free muriatic acid. To avoid the oxidation of sulphurous to sulphuric acid by the ferric chloride, and the precipitation of sulphides of manganium and iron by the calcium sulphide, a portion of the sulphur liquors is decomposed by the muriatic acid when the sulphuretted hydrogen reduces the ferric to ferrous chloride; this and the manganous chloride act upon the hyposulphites like muriatic acid.

This process has been introduced into most soda factories of the German Zollverein, and is being introduced in England, France and Belgium. The factory at Aussig alone produces annually 9000 cwt. of chemically pure sulphur.—*Chem. Centralb.*, 1869, 491–495, from *Verhandl. der. physik.-medic. Gesellsch. in Würzburg*, 1868, I, 147.

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## ON CYTISINA.

By Aug. Husemann.

This alkaloid was discovered by the author and Marmé in 1865. It is obtained by exhausting the bruised seeds of Cytisus Laburnum with cold acidulated water, neutralizing the liquid almost with lime, precipitating with subacetate of lead, treating the filtrate with sulphuretted hydrogen and neutralizing com-

pletely with soda. The concentrated liquid is now precipitated with tannin with the precaution of keeping it neutral or faintly alkaline by the addition of soda, the precipitate is rapidly washed with water, pressed, then dissolved in water, again precipitated by subacetate of lead, the lead removed by sulphuric acid, the liquid concentrated, rendered alkaline by soda and precipitated by tannin. The filtrate is again treated the same way; the precipitates are decomposed by oxide of lead, the mixture exsiccated and exhausted with 85 per cent. alcohol. The residue after the evaporation of the alcohol is acidulated with nitric acid, treated with 6 or 8 volumes of absolute alcohol and the solution decanted from a resinous mass, when it separates crystals of nitrate of cytisina. This salt is not completely decomposed by oxide of lead or baryta; on boiling with concentrated potassa solution, the alkaloid separates as an oil which solidifies on cooling. After washing with little water, it is kept in an atmosphere of carbonic acid to convert the adhering potassa into carbonate, and then crystallized from absolute alcohol.

Cytisina $C_{40}H_{27}N_3O_2$ forms white radiating crystals of a bitterish, faintly alkaline taste, sublimable on careful heating, particularly in a current of hydrogen, in long needles and plates, fusible at about 154·5°C, very freely soluble in water and alcohol, little or not in ether, chloroform, benzol and bisulphide of carbon. It is one of the strongest vegetable bases, and precipitates not only the earths and oxides of the heavy metals, but it liberates also in the cold ammonia from its salts; it does not dissolve those oxides, and if present in excess, prevents the reduction of oxide of copper by grape-sugar.

The nitrate $C_{40}H_{27}N_3O_{21}2NHO_6 + 4HO$ is the only salt which crystallizes readily; upon the slide under the microscope it forms crystallizations resembling fir-branches; it has an acid reaction and is sparingly soluble in absolute alcohol, freely in water and diluted alcohol, insoluble in ether.

Corrosive sublimate yields with the alkaloid a precipitate of a double salt. The chlorides of platinum and of gold, iodohydrargyrate of potassium, potassio-iodide of cadmium, biniodide of potassium and picric acid produce with dilute solutions of the salts crystallizable precipitates. Bromine water yields with

$\frac{1}{15000}$, and phosphomolybdic acid with $\frac{1}{30000}$ cytisina a turbidity.

The alkaloid has no characteristic color tests. Concentrated sulphuric acid yields (even when heated to 150 to 200°C) a colorless solution, which is not affected by molybdate of soda, but rendered permanently orange-yellow by nitric acid, and by bichromate of potassa is rendered yellow, the color becoming dirty brown and finally green. Nitric acid yields a colorless solution becoming orange on heating.

The author regards it difficult in forensic cases to prove the presence of this alkaloid, which occurs in all parts of Cytisus Laburnum except the wood, and is most abundant in the ripe seeds. The base appears to be peculiar to the entire genus of Laburnum.

Marmé states that this poison is apt to act as an emetic. Employed subcutaneously, a few decigrammes killed a large dog, 0·03 to 0·04 grm. a cat. Introduced into the blood, death was produced in cats by 0·01–0·015 grm., in dogs by 0·03 grm.; in large old rabbits by 0·01–0·015 grm. Death results from asphyxia, and may be prevented by timely resort to artificial respiration, to be continued from ½ to 2 hours.—(*Chemisches Centralbl.* 1869, *No.* 32, from *Zugabe zu dem Programme der Bündner Cantonschule, Chur* 1869.

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## THE MANUFACTURE OF BORAX FROM THE NATIVE BORATE OF LIME.

By Dr. Graeger.

The author states that, since he found that what is stated in treatises and handbooks on chemistry concerning pure borate of lime is generally quite erroneous, he commenced by studying the properties of that substance more minutely. Pure borate of lime is only slightly soluble in pure water, 100 parts of which, at about 18°, only dissolve from 0·304 to 0·333 parts of that salt; boiling water does not dissolve, perceptibly, more of this salt. A solution of pure borate of lime in water behaves, with the following reagents, in the following manner:—Ammonia, no precipitate; caustic potassa solution, very slight precipitate, due to a trace of carbonate present along with the caustic

alkali; carbonate of ammonia, copious precipitate, soluble in excess of precipitant; carbonates of potassa and soda, permanent precipitates; neither the nitrate of protoxide, nor of peroxide of mercury, nor, also, neutral chloride of iron, exhibit any reaction with the solution in question; solution of sulphate of copper gives a greenish blue precipitate. Since borate of lime is less soluble, even in alcohol, then sulphate of lime, a solution of the former salt in water containing only 1000th part of the salt is readily precipitated by alcohol containing 60 per cent. of absolute alcohol. The presence in solution in water of some salts, especially chloride of sodium and ammonium, largely increases the solubility of borate of lime in water. Such acids as form with lime readily soluble salts, do readily dissolve borate of lime, both pure and native; and from such solutions, if concentrated, boracic acid is precipitated. The portion of this paper relating to the manufacture of borax and boracic acid from the native borate of lime alluded to, is rather a practical receipt for the proper performance of this branch of industry, and, therefore, not well suited for abstraction, the less so as the price of fuel, soda, and other things necessarily influence the applicability of the borate of lime for that purpose.—*Chem. News, Sept.* 3, 1869.

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## NEW PROPERTIES AND USES OF NAPHTHALIN.

By Dr. Adolph Ott.

The naphthalin, discovered in 1820 by Garden, is found to be of great importance. Its derivatives have produced benzoic acid, benzol, nitro-benzol, and aniline, as well as fine yellow and red dyes. The yellow was described in a translation from Dr. Brimmeyer in the August number of this journal.

### PREPARATION OF NAPHTHALIN.

H. Vohl describes the following method for the preparation of this hydro-carbon as the most practical: For the crude product that part of the pitch or dead oil is selected which solidifies when cold; it is obtained by fractional distillation. The dead oil is put into suitable vats and left in a cool cellar from six to eight days, when crystals of naphthalin are formed. The liquid part

is then drawn off, and the crystals are reduced to a powder in a mortar. It is then put into felt sacks or a centrifuge for the purpose of removing the moisture which may have been retained among the crystals. This mass is then subjected to a gradually increased hydrostatic pressure, after which it is transferred into an iron vessel provided with a coil for heating by steam, and a stirrer which must be so arranged that it can be operated while the vessel is closed. When melted, a few per cent. of soda lye is mixed with it for the purpose of separating the carbolic acid and certain resins. The liquid obtained is blown off after a short time, and the operation repeated; finally the mass is washed with water until all alkaline reaction has ceased. The liquid naphthalin is then mixed with a small percentage of oil of vitriol of 45° Baume, which is allowed to remain with it from two to three hours, at a temperature of 212° Fahrenheit, when the naphthalin is transferred to cast-iron stills capable of withstanding a high heat. It will overflow at a temperature of 410° Fahrenheit, in a thick stream. If the still is sufficiently large, 100 pounds of naphthalin may be easily obtained within twenty minutes. The water of the condensing tank must be kept at 170° Fahrenheit, the receiver being also kept in water of that temperature. When the heat in the distilling vessel has reached a temperature of 450° Fahrenheit the receiving vessels are changed. After the oil has all run over, the remainder of the overflow is worked up with a new portion. Finally the substance is poured into conical cylinders of glass, metal, or moistened wood, in which it soon solidifies, and in contracting separates from the sides. It is thus formed into sticks, like sulphur.

### ON SOME NEW PROPERTIES OF NAPHTHALIN.

The naphthalin obtained in this way is similar to alabaster, cracks easily in the warm hands, and becomes negatively electric on being rubbed with silk. Its specific weight at 66° Fahrenheit, as indicated by Vohl, is 1·15173; it melts at 174°, and boils at 452°.

Melted naphthalin absorbs a large quantity of atmospheric air, which is given off in cooling. This expulsion is so turbulent

that the liquid, in quantities of one to two pounds, appears to be boiling. The absorbed air is also the cause of the open spaces found in the interior of the sticks. According to Vohl the air absorbed by naphthalin is considerably richer in oxygen than atmospheric air; *perhaps it is pure oxygen.* Melted naphthalin readily dissolves substances which are not otherwise easily dissolved. Vohl discovered that indigo is dissolved with great facility, forming, with the naphthalin, a dark blue-violet liquid, from which the indigo, in cooling, separates and forms into fine needles, shining like copper. The amorphous sulphides of arsenic, tin and antimony are dissolved readily, and separate in cooling into crystalline forms. It also dissolves phosphorus, sulphur, iodine, the iodide and chloride of mercury, arsenious, succinic, benzoic, and oxalic acids.

The sulphide of elayl, of Loewig and Weidman ($C^4$, $H^4$, $S^2$), is taken up very readily by melted naphthalin, which, in cooling, forms small grains, proving, under the microscope, to be crystalline masses.

### TRANSFORMATION OF NAPHTHALIN INTO BENZOIC AND BENZOL.

The first step in the preparation of benzoic acid from naphthalin consists in the conversion of the latter into naphthalic or phthalic acid by the method of Vohl; the second is the conversion of phthalic into benzoic acid.

1. *Naphthalic acid.*—The formula of naphthalin being $C^{20}$,$H^8$, that of naphthalic acid $C^{16}$, $H^4$, $O^6$; the operation consists in taking $C^4$, $H^4$ from the original product and combining $O^6$ with it. This is accomplished by dissolving 12 parts of pure napthalin in 90 parts of concentrated sulphuric acid, and carefully adding to this solution 80 parts of finely pulverized black oxide of manganese. After the reaction is completed the product is boiled in four or five times its own volume of water until the generation of carbonic acid has almost ceased; then the liquid is diluted with its own volume of water, filtered, and evaporated by steam in an iron boiler, lined on the inside with lead, whereby sulphate of manganese is obtained separately. The mother lye, on being further evaporated, furnishes the naphthalic acid.

2. *Benzoic Acid from Naphthalic Acid.*—This process, as

performed by Messrs. Depouilly Brothers, is based upon the fact that phthalic acid mingled with a surplus of lime, and at a temperature of 625° to 660° F, is converted into benzoate of lime. It must be performed in vacuum. This reaction may be expressed by the following equation: naphthalate of lime = $C^{16}$, $H^4$, $O^6$+2CaO, and hydrate of lime = CaO, HO, yield, when heated to the above temperature, benzoate of lime = $C^{14}$, $H^5$, $O^3$ +CaO, and carbonate of lime = 2(CaO, $CO^2$) Decomposition of water and formation of carbonic acid then takes place. To successfully accomplish this operation, however, requires considerable skill and practice.

Benzoic acid is separated from benzoate of lime by hydrochloric acid, and with respect to the benzol, it can be obtained by subjecting benzoate of lime to distillation with lime. This operation is nearly always successful. The following formulæ give the successive steps in these operations:

Naphthalin = $C^{20}$·$H^8$.

Phthalic acid = $C^{16}$ $H^4$ $O^6$.

Benzoic acid = $C^{14}$ $H^5$ $O^3$.

Benzol = $C^{12}$ $H^6$.

The latter may serve for the production of nitro-benzol, $C^{12}$, $H^5$, O+$NO^3$, also aniline, the formula of which is $C^{12}$, $H^5$, N.—*Jour. Applied Chemistry*, Sept., 1869.

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## PARCHMENT.

The ancient process employed for producing parchment was nearly analogous to that now actually in use. Goat and sheep-skins are preferred for making parchment; white calf, lamb, and still-born kid-skins are reserved for vellum. The art of the parchment maker consists in making these skins very thin and almost transparent, they yet being perfectly firm and strong for use. After the hides have been depilated, unfleshed, and partly ungreased, they are immersed into a solution of alum and sea salt; they are then very quickly dried and stretched out on wooden frames, by means of screws, and drawn so tightly that no wrinkle or fold remains. When the skin is very dry the workman, with a sharp iron, takes off all the flesh which may

adhere to its internal surface, then, turning his grater towards the back, he removes all the dirt, and the water which has accumulated on the external side, or epidermis, taking great care not to injure the same. Upon which he proceeds to pounce it, that is to say, he covers the skin, on the inner side only, with a layer of very fine powdered dead lime, and then passes a very large pumice-stone over it. The lime absorbs with rapidity all the water yet retained in the skin. After these operations, the skin is again dried, and then given to the polisher, who treats it again in precisely the same manner as before described. He makes it thinner and more equal, gives it a beautiful polish, by means of a very soft pumice-stone. The parchment is then folded, shaved off, put in the press, and sent forth to the trade. Vellum is only a superior quality of parchment; it is made of the finest skins, generally from the lamb or the calf, as its name indicates (*veel* in the middle-ages meant calf). A solution of gum water and fine white-lead is spread on the vellum, in order to give it a whiter and smoother aspect. The intestines of animals have sometimes been employed. Zonore states, in his "Annals," that the Library at Constantinople possessed Homer's works written in golden letters on the intestine of a serpent, which was 120 feet in length. Parchment in former times was dyed yellow or purple; the latter being generally reserved for sacred books, or for the use of royal families.—*Morgan's Brit. Trade Journ.*, July 2, 1869.

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## FRENCH BRANDY.

Cognac, with its brandy distilleries and its 24,000 inhabitants, is reported by the Hon. H. P. Vereker, her Majesty's Consul at Tonnay-Charente, to be one of the wealthiest towns in the world in proportion to its size. The quantity of brandy exported from Tonnay-Charente in 1868 was 9,187,816 gallons, nearly the whole of which was exported to the United Kingdom. In 1863 the exportation was only 3,988,358 gallons, in 1866 it reached 11,562,210 gallons, and in 1867 the quantity was 9,770,420 gallons. In recent years there has been a larger quantity shipped in bottle instead of in cask, and although the brandies

exported in 1868 show a slight diminution compared with 1867, yet the number of cases containing bottled brandy shipped has increased from 558,086 in 1867 to 627,602 in 1868, of which 576,989 were sent to the United Kingdom. The least quantity contained in a case is 12 bottles; many have more, but, reckoning only 12 in each case, the exportation would involve 7,500,000 bottles. The brandy exported from Charente in 1868 is valued at 1,887,678*l.*, of which 1,733,854*l* was conveyed in British bottoms, and 153,824*l* in foreign; the latter mostly to Australia. Notwithstanding the slight diminution in quantity last year, there was an augmentation in the value. The vintage of 1868 was severely checked by some late frosts, and the exceptionally dry summer operated in the same direction; but when the grape was subjected to distillation the alcohol contained in the juice was found to be considerably above the average, and the brandy produced from a given quantity proportionately larger. It is therefore believed that the exports will continue on an extensive scale in the present year.—*Morgan's Brit. Trade Journ.*, July 2, 1869.

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## HOW SNUFF IS MADE.

The process of manufacture is nearly as follows:—

The leaf is stripped from the stem in large quantities, and steeped in water until thoroughly wet. It is then placed in a kiln, where it dries until it is simply flexible, losing all that crispness which it originally had. From the drying kiln it is taken to a strong screw press, and placed in an oblong box, where it is pressed until it becomes a solid block. This is done that it may present a hard, unyielding surface to the knives of the cutter, beneath which it is next placed. It may be well to state that each manufacturer possessing a cutter has to give security to the amount of 3000 dollars for the payment of his producing tax. The tobacco is cut closely by the machine, from which it is taken to the drying floor above. Here it is spread in a heap to ferment, a process that requires about a month to perfect. The greatest caution and attention are required while the weed is in this state to keep it from spoiling; like bread,

however, the nearer you can get it to spoiling, without actually doing so, the better it will be. It has to be turned and moved constantly until it is thoroughly fermented, when it is taken down stairs again and put through the mill. This mill consists of a series of conical hoppers called "mulls," in which are placed four vertical iron rollers, which act as mill stones in grinding the tobacco. The manufacturer has to give security in 1000 dollars for each "mull" also, to insure the payment of his tax to the government. The tobacco comes out of the "mull" in the shape of what is called "coarse meal," the grain being about twice the size of coarse Indian meal. After being wet and manipulated this becomes "Rappee" snuff without further grinding, and is the cheapest kind. The whole mass is then put into barrels in a perfectly cool condition. It has no smell or flavor whatever. After remaining in the barrels a short time it becomes heated, and in the course of ten days or two weeks it is taken out, with a high flavor and strength. The longer it is kept in the barrels the darker it becomes in color, and it also gains additional strength. Salt is then mixed with it to cool it down and keep it. If "Scotch" snuff is desired, it is made perfectly dry, and ground in the mill again to make it of finer grain. This is the whole mystery of snuff-making.—*Morgan's Brit. Trade Journ.*, July 2, 1869, from *New York Druggists' Circular.*

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## THE BORACIC ACID SPRINGS IN TUSCANY.

**To the Editor of the Pharmaceutical Journal.**

Under the impression that some of your readers might like to see a short account of these interesting springs, I have jotted down a few memoranda which I made on the occasion of a visit to one of them in the summer of last year.

Six in number, and all of volcanic origin, the springs are situated high up the mountains, nearly midway between Florence and Rome. The scenery during the greater part of the journey from Florence is very beautiful, the road passing through vineyards and olive plantations, varied by large copses of myrtle bushes. In the immediate neighborhood of the springs, however, it is as uninteresting as can well be imagined, the large

amount of sulphurous gas evolved very possibly affecting the vegetation to a greater or less extent. The boracic acid is found, mixed with other matter, in three different states :—

1. Mixed with mud, forming a thick paste, almost solid.

2. As a thick, muddy solution, very much resembling Thames water at low tide.

3. As a fountain of the solution, very highly concentrated, and so pure that there is not the slightest smell of any compound of sulphur with it. This is the more remarkable, as in both the other forms the presence of sulphur is strongly indicated by the smell.

Of the pasty mixture there were only three or four vats or wells; whilst of the more liquid preparation there were about twelve or fourteen,—varying in diameter from 30 to 50 or 60 feet.

The clear solution was thrown up to a height of about 30 feet (on some days rather higher, and on some not so high); but to prevent waste, a huge cone-shaped basket is fastened over it, a short distance above ground, by means of which it can be the more easily guided into any one of the numerous vats and coolers waiting to receive it.

The muddy liquid mixture is drained off into large tubs holding about 150 gallons each. Upon cooling, the very impure acid crystallizes round the sides of the tub, whence it is afterwards removed to be purified.

From 2688 to 3253 casks of commercially pure boracic acid are sent away from this place yearly, each cask weighing on an average 300 kilos. At a rough calculation this would give us 1,893,900 kilos, or 1691 tons, as the quantity annually sent into the market from this one source. As there are five other sources in various parts of the mountains, all of them in full action, and two or three much larger than the one I have seen, the sum total would amount to, at least, 10,500 tons collected per annum. I say "at least," for I have put the average lower than it really is, and I have also supposed that each spring gave the same average; instead of which, two or three of them, as I have said before, are much larger than the others. Three thousand men and boys in all are employed in the works, the men with their

families forming a village by themselves a short distance away from the springs. Each village, too, is perfect in its way, finding its own church, etc., and having manufactories of cloth, paper, tools, etc. Almost everything, in fact, is home-made, and, as a rule, by no means badly made. Should any of my "brother chips" ever find themselves at Florence, I would strongly recommend a visit to one of these interesting places. They will be amply repaid their extra trouble and expense.

At the first glimpse of the spring it appears very like a small volcano in full eruption. The flames are wanting, it is true, but everything else is there; the peculiar cone-like appearance of the wells, with their seething, bubbling contents, and the volumes of steam and gases which issue from the ground in every direction, accompanied by the peculiar rumbling sound which is always to be heard there, all combine to produce an effect upon the visitor which is not soon forgotten.

Apologizing for the length to which I have drawn my jottings, I remain, yours truly, W. B.

*Florence, August* 19, 1869.

—*Lond. Pharm. Journ.*, Sept., 1869.

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## EVOLUTION OF AMMONIA GAS FROM MUSHROOMS.

By M. El. Borscow.

The author says that, many years ago, the late Professor Sachs observed that when a glass rod, moistened with dilute hydrochloric acid (specific gravity, 1·12) was brought near vigorously and healthily growing mushrooms, there appears a white vapor, evidently due to the formation of chloride of ammonium. This fact has been confirmed by Dr. G. Lehmann, while the late Alexander Von Humboldt stated that mushrooms constantly give off, not only ammonia, but also hydrogen. The author of this paper has thoroughly investigated this subject, taking due care to eliminate all sources of error from his experiments by every precaution modern science can suggest and successfully apply. Several engravings would be absolutely necessary for the proper understanding of these researches; but we briefly notice the following results:—(1) different kinds and species of

mushrooms give off, while growing viorously, weighable quantities of ammonia; (2) this evolution of ammonia is not confined to full-grown mushrooms only, but also to the young individuals, and even to some varieties of mushroom spawn; (3) this evolution of ammonia is a proper function of the living organism of these cryptogamic vegetables, and is very little, if at all, influenced by exterior causes; (4) there is no direct relation between the quantity of ammonia and that of carbonic acid given off during a given period of time. The quantity of ammonia given off during a certain length of time bears no direct relation to the weight of the substance from which it is given off.—*Chem. News*, August 27, 1869, from *Bulletin de l'Académie Impériale des Sciences de St. Petersbourg*, Vol. xiv, No. 1.

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## ON BETAIN, A NEW VEGETABLE BASE MET WITH IN THE JUICE OF SUGAR BEET-ROOTS (*BETA VULGARIS.*)

By M. C. Scheibler.

The author says, in the year 1866 he published a brief account about a vegetable base met with in the juice of the sugar beet-roots, and which base, on account of its great solubility, becomes accumulated during the sugar manufacture from beet-root juice, in the molasses which result from that process. The author has prepared this base from the freshly expressed juice of the sugar beet-root, as well as from the molasses. The process of separation is, as might be expected from the complex nature of the substances just named, very complicated, and requires the use of phospho-molybdate of soda. Since in this country there do not exist beet-root sugar works, and since large quantities of juice have to be operated upon, we do not enter into the details of preparation, but describe the new base *betaïn*. It is a solid substance, crystallising from its alcoholic solution in large crystals, which are very deliquescent, and contain water of crystallisation, which they lose by drying at 100° or over strong sulphuric acid; the base is very soluble in water, its solution saturated at 25° has a specific gravity of 1·1177, and then contains 61·8 per cent. of the anhydrous base. Betaïn does not

affect vegetable colors, is void of smell, and has a sweetish cooling taste. The result of the elementary organic analysis of betaïn dried and fully deprived of all water led to the formula $C_5H_{11}NO_2$; the crystalline air-dried substance has the formula $C_5H_{11}NO_2 + H_2O$. This base yields, with many acids, beautifully crystallised salts, and readily forms well-crystallised double salts with the chlorides of gold and platinum, mercury, cadmium and zinc. When betaïn is boiled with an aqueous solution of caustic potassa, it is thereby split up into several bases, among which trimethylamin is found. Oxidation of betaïn by means of chromic acid and the action of strong hydriodic acid, both tried in sealed tubes, led to no results of any value. Betaïn resists the oxidising action of chromic acid.—*Chem. News*, August 27, 1869, from *Berichte der Deutschen Chem. Gesellsch. zu Berlin*, 1869.

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## NEW APPARATUS FOR THE CONCENTRATION OF SULPHURIC ACID.

By M. Cotelle.

It is a well known fact that the concentration of sulphuric acid in platinum vessels is an expensive process, owing to the high price of the first purchase of these apparatus, and the expense attending any soldering or repair. The author has had made a column, lined inside with fire-bricks, and made outside of good ordinary bricks; it rests on a large pedestal. This column is open at both top and bottom; but in these openings are fitted fire-clay stoppers. The inside of this apparatus is fitted with previously calcined pumice-stone; inside the lower portion of this column, openings are made between the bricks, through which a current of highly-heated air is forced. From the top the acid, which has to be concentrated. is made to trickle on the pumice-stone, and, meeting with a current of highly-heated air, the superfluous water is driven off, and the acid, on arriving at the bottom, is in a concentrated state, and runs off in properly-arranged vessels.—*Chem. News*, August 27, 1869, from *Jour. de Pharm. et de Chim.*, *July*, 1869.

# Minutes of the Philadelphia College of Pharmacy.

Meetings were held by adjournment on May 10th, May 24th and May 31st, 1869. The Committee on revision of the By-Laws reported, and after discussion the proposed By-Laws were modified and directed to be reported to the next semi-annual meeting.

At the meeting of May 10th the Treasurer reported the receipt of one hundred dollars toward the Building Fund.

The Auditors who were appointed to examine the accounts of the Committee of Ways and Means, reported that they had attended to the duty, and found the accounts with accompanying vouchers correct, and, on motion, the Committee of Ways and Means were discharged.

At the meeting of May 24th Mr. A. B. Taylor presented to the College the second diploma issued by this institution, it having been granted to Dr. Wm. Sharpe. It was directed to be framed and placed in a conspicuous place in the College Building.

*Sept. 27th*, 1869. The semi-annual meeting was held at the College Hall. J. J. Ottinger and J. L. Supplee were reported as having passed the June examination and received the diploma of the College. The subject of the revised By-Laws was taken up and partly considered, section by section.

The semi-annual election having been called for, the ballot resulted in the choice of Wilson H. Pile, M. D., A. B. Taylor, W. C. Bakes, H. N. Rittenhouse, Edward Parrish, Evan T. Ellis, Wm. J. Jenks, and Chas. Shivers, as Trustees for twelve months.

*Committee on Deceased Members.*—Edw. Parrish, Wm. Procter, Jr., and Chas. Bullock. On motion, adjourned to Oct. 1t, at 2 P. M.

*Oct. 1st*, 1869.—Adjourned meeting held at College Hall. Minutes read and approved, and the By-Laws were then considered.

The Code of Ethics was next brought up for discussion and adopted, with a mere verbal alteration.

It was then moved and seconded that the By-Laws as read and amended be adopted, which was unanimously determined on.

Adjourned to Oct. 5th, 1869.

*Oct. 5th*, 1869.—The following gentlemen, eminent for their attainments as chemists or pharmaceutists, having been duly proposed in accordance with the By-Laws, at the last annual meeting, were elected Honorary Members of this College:

*England.*—Daniel Hanbury, F.R.S., London; Henry Deane, Clapham, London; Wm. Crookes, F.R.S., London; John Elliott Howard, London.

*France.*—M. Berthelot; M. Louis Mialhe; M. Bussy; Pierre François Guillaume Boullay; M. Pasteur; M. Cahours, all of Paris.

*Germany.*—Dr. Fred. Mohr, Coblentz; Prof. Fred. Wohler, Gottin-

gen; W. Dankworth, Magdeburg; Joseph Dittrich, Prague; Prof. A. W. Hoffmann, Berlin; Adolph Duflos, Breslau; K. Von Schroff, Vienna.

*Russia.*—Iran Pfeffer, St. Petersbug; C. Frederking, Riga.

*Netherlands.*—Dr. J. E. De Vry, Rotterdam; Prof. J. S. Stas, Brussels, *Belgium;* Dr. X. Landerer, Athens, *Greece;* Prof. De Luca, Naples, *Italy;* Dr. F. A. Fluckiger, Bern, *Switzerland;* Carlos Ferrari, Madrid, *Spain.*

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[From the Minutes of the American Pharmaceutical Association, see page 496.]

## DRAFT OF A PROPOSED LAW

*To regulate the Practice of Pharmacy and the Sale of Poisons, and to prevent the Adulteration of Drugs and Medicines.*

### PREAMBLE.

*Whereas*, the safety and welfare of the public is endangered by the sale of poisons by unqualified or ignorant persons; and *whereas* in all civilized countries it is found necessary to restrict this species of traffic and to provide by law for the regulation of the delicate and responsible business of compounding and dispensing the powerful agents used in medicine; and *whereas* the adulteration and sophistication of drugs and medicines is a species of fraud which should be prevented and suitably punished; therefore be it enacted, &c.

*Section* 1. From and after the day of it shall be unlawful for any person to keep open shop for retailing, dispensing or compounding medicines and poisons, unless such person shall be a *registered pharmacist* within the meaning of this act, and shall also conform to the regulations as to the keeping, dispensing, selling and compounding poisons hereinafter provided; and every shop kept open for the retailing, dispensing and compounding of medicines and poisons shall be under the direct personal care, oversight and management of a registered pharmacist or registered assistant in pharmacy, and every registered pharmacist owning more than one such shop shall employ at every such shop, except the one he himself manages, a registered assistant in pharmacy, to manage and supervise that particular shop only.

*Sect.* 2. No person shall be allowed to assume, use or exhibit the title of *Registered Pharmacist* or *Registered Assistant in Pharmacy* unless he shall have actually been registered as such in accordance with this Act.

*Sect.* 3. No person shall be entitled to become a registered pharmacist unless he be either a graduate in pharmacy, a practising pharmacist, or a practising assistant in pharmacy.

*Sect.* 4. *Graduates in Pharmacy* shall be understood to be such persons only as have obtained the diploma of a regularly incorporated or chartered *College of Pharmacy* within the United States; and also persons possessing a diploma or degree from some pharmaceutical institution situated in a foreign country, said diploma being acknowledged and endorsed by the Pharmaceutical board of this State as sufficient to entitle such person to be considered a Graduate in Pharmacy.

*Practising Pharmacists* shall be understood to be such persons only as at or prior to the passage of this Act have kept and continue to keep open shop within this State for dispensing and compounding the prescriptions of medical practitioners, and for the sale of drugs and medicines.

*Practising Assistants in Pharmacy* shall be understood to be such persons only as shall have attained the age of twenty-one years, and who shall have served four years' apprenticeship in a shop where the prescriptions of medical practitioners were dispensed or compounded, and who shall have passed an examination by the Pharmaceutical board of this State as hereinafter provided.

*Sect.* 5. On or before the first day of June after the passage of this Act, and every third year thereafter on or before the same date, the incorporated Colleges of Pharmacy and Pharmaceutical Societies of this State shall submit to the Governor the names of twenty pharmacists or professors in Colleges of Pharmacy, out of which number the Governor shall appoint seven persons who shall constitute the Pharmaceutical Board of the State of , who shall hold office for the term of three years and until their successors shall have been appointed; and in case of removal from the State, resignation or death of any member, the Governor shall appoint in his place a registered pharmacist or a professor in a College of Pharmacy to serve as a member of the Board for the remainder of the term.

*Sect.* 6. The duties of the Pharmaceutical Board shall be to examine all candidates presenting themselves; to direct the registration by the Registrar of Pharmacists of all persons properly qualified or entitled under this Act; to cause the prosecution of all persons violating its provisions; and to report annually to the Governor on the condition of pharmacy in the State, and such suggestions as they may deem expedient.

Four members of the Pharmaceutical Board shall constitute a quorum; they shall organize by the election for the entire term of a President and a Secretary, who shall sign all certificates and other official documents; they shall meet at least twice a year, and shall have power to make by-laws for the proper fulfillment of their duties under this Act; they shall likewise have power to prepare a list of foreign Pharmaceutical Institutions or Colleges, the diplomas of which will be recognized as equivalent to the diplomas of Colleges of Pharmacy in the United States, and to endorse their approval on any such diploma when presented to them; for said endorsement they shall be entitled to a fee of five dollars.

All persons applying for examination shall pay to the Pharmaceutical Board ten dollars; and, if passing the examination, shall be furnished with a certificate in accordance with Schedule E of this Act, for which certificate no fee shall be exacted or paid.

*Sect.* 7. Immediately on the passage of this Act the Governor of the State shall appoint a *Registrar of Pharmacists*, who shall hold office for three years, at the end of which time a successor shall be appointed or the same person reappointed; and in case of the death, resignation or removal of a Registrar before the expiration of his term of office, the Governor shall appoint some person to the office for the remainder of the term.

A Registrar guilty of any misconduct or malfeasance in office shall, in addition to the penalties hereinafter provided, be removed from office, and a successor appointed by the Governor.

*Sect.* 8. The duties of the Registrar shall be to keep a book in which shall be entered, under the supervision of the Pharmaceutical Board, and in the form set forth in Schedule B to this Act, the name and place of business of every person doing business in this State who shall apply to him in the form prescribed in Schedule C to this Act, producing proper evidence in accordance with sections three and four of this Act that he is a *graduate in pharmacy*, or a *practising pharmacist*, or a duly qualified *practising assistant in pharmacy*. It shall also be the duty of the Registrar to erase from his register the name of any registered pharmacist who may have died or removed from the State, and to make all necessary alterations in the location of persons registered under this Act. For the first registration as registered pharmacist, the Registrar shall receive a fee of five dollars. *Provided*, that all persons in business at the time of the passage of this Act, shall be entitled to registration on paying one dollar.

And in order to enable the Registrar to duly fulfil the duties hereby imposed upon him, it shall be the duty of every registered pharmacist, upon changing his place of business, to forthwith notify the Registrar by letter of such change, and to enclose a fee of one dollar, upon receipt of which notification and fee the Registrar shall make the necessary alterations in his register. And it shall

be the duty of every registered pharmacist to communicate by letter to the Registrar each year, on the first day of December, whether he still continues practising pharmacy at his registered place of business, and to enclose a fee of one dollar for the insertion of his name and business address in the register for the ensuing year; and on or before the tenth day of January in each year, commencing with January, 18 , said Registrar shall notify every registered pharmacist who shall not have written to him as aforesaid; and in case an answer, enclosing an additional fee of fifty cents, shall not be received by the Registrar within fourteen days, such registered pharmacist shall be stricken from the register, and his name be at once reported by the Registrar to the President of the Pharmaceutical Board. *Provided always*, that his name shall be restored to the register on payment to the Registrar of a fee of five dollars, and in case more than one year has elapsed since the date of sending the aforesaid notification, he shall also produce proper evidence of being entitled to registration, in like manner as if his name had never been registered. All aforesaid notifications sent by said Registrar shall have printed on the outside an inscription directing their return to the office of the Registrar, in case the persons to whom they are addressed cannot be found.

Graduates and practising assistants in pharmacy shall, upon application to the Registrar in the form set forth in Schedule D to this Act, be entitled to be entered as registered assistants in pharmacy at an annual fee of twenty-five cents.

The Registrar shall, on the written demand of any registered pharmacist or registered assistant, accompanied by a fee of twenty-five cents, give him a certificate under his own hand, setting forth, in the manner presented in Schedule H to this Act, that such person is so registered.

No name shall be entered on the register except of persons authorized by this Act to be thus registered, nor unless the Registrar be satisfied by proper evidence in accordance with this Act, that the applicant is entitled to be registered.

The Registrar shall, in the month of March of each year, cause to be printed and published, as nearly as may be in the form of Schedule B of this Act, a correct list of the names of all registered pharmacists and registered assistants, arranged in the alphabetical order of their surnames, with their respective places of business, and such printed list shall be entitled the *Official Register of Pharmacists* within the State of ; a copy of which, or a certificate under the hand of the Registrar, shall be evidence in all the courts of this State that the persons therein specified are registered according to the provisions of this Act, and the absence of the name of any person from such printed register shall be presumptive evidence that such person is not registered according to the provisions of this Act; and each and every registered pharmacist within the State shall be supplied by the Registrar with a copy of said official register of pharmacists, to be sent by mail free of charge, and the postage thereon prepaid.

*Sect.* 9. Any Registrar who shall wilfully make or cause to be made any falsification in any matter relating to the said official register of pharmacists, and any person who shall wilfully procure or attempt to procure himself to be registered under this Act, by making, or producing, or causing to be made or produced, any false or fraudulent representation or declaration, either verbally or in writing, and any person aiding or assisting him therein, shall be deemed guilty of misdemeanor, and shall, on conviction thereof, be sentenced to be imprisoned for a term not exceeding twelve months, nor less than three months, and in addition thereto may be fined a sum not exceeding one thousand dollars, to be paid into the State Treasury.

*Sect.* 10. *And be it further enacted*, that any person not a registered pharmacist, who shall after the day of 18 , keep open shop for the retailing or dispensing of medicines and poisons, or who shall take, use, or exhibit the title of *Registered Pharmacist*, shall for every such offence be liable to a penalty of fifty dollars, to be paid to the Pharmaceutical Board to

defray expenses, and such penalty shall be sued for and recovered in the same manner as is now provided by the Revised Statutes of this State, for the recovery of penalties in other *qui tam* actions. *Provided, however*, that in rural districts, where there is no registered pharmacist within three miles, it shall be lawful for retail dealers annually to procure licenses from the registrar of pharmacists, at a fee of one dollar, as retailers of poisons, and all sales of poisons by persons so licensed shall be recorded in a book kept for that purpose only, in the same manner as provided in Sect. 13 of this Act.

*Sect.* 11. And any registered pharmacist or authorized retailer of poisons, who shall fail to comply with the regulations of this Act in regard to retailing, dispensing and compounding of poisons, shall be liable to a penalty of fifty dollars for the first offence, and one hundred dollars for the second and every subsequent offence, and such penalty shall be sued for, recovered and paid to the Pharmaceutical Board of this State in the manner provided in Section 10.

*Sect.* 12. *But be it provided*, that nothing hereinbefore contained shall apply to, or in any manner whatever interfere with, the business of any practitioner of medicine who does not keep open shop for the retailing, dispensing or compounding of medicines and poisons, nor prevent him from administering or supplying to his patients such articles as may seem to him fit and proper, nor with the making and dealing in proprietary remedies, (popularly called patent medicines), unless such medicines should be wholly or partly composed of any of the articles enumerated in Schedule A, nor with the business of wholesale dealers in supplying poisons according to the ordinary course of wholesale dealing to retailers and physicians, and for use in the arts.

And upon the decease of any registered pharmacist, actually in business at the time of his death, it shall be lawful for any executor, administrator or trustee of the estate of such registered pharmacist, to continue such business, if and for so long only as such business shall actually be conducted by a registered pharmacist or registered assistant in pharmacy; but if such person be not registered, he must cause himself to be registered within twenty days of his commencing to conduct the business of said decedent, under the same penalties as are prescribed in the tenth section of this Act, which penalties shall be collected from the estate of said decedent.

*Sect.* 13. *And be it further enacted*, that from and after the day of , it shall be unlawful for any person to sell, either by wholesale or retail, any poison, without distinctly labelling the bottle, box, vessel, or paper, and wrapper or cover in which said poison is contained, with the name of the article, the word poison, and the name and place of business of the seller.

Nor shall it be lawful for any registered pharmacist, or authorized retailer of poisons, to sell or dispense a poison without being satisfied that it is for legitimate use, and before delivery to the buyer, making or causing to be made an entry in a book kept for that purpose only, to be preserved for at least five years, and to be always open to the inspection of the Pharmaceutical Board, the Registrar of Pharmacists, the Board of Health, the Coroner, and the officers of the different Courts, stating in the form set forth in Schedule F, annexed to this Act, the date of the sale, the name and address of the purchaser, the name and quantity of the article sold, and the purpose for which it is stated by the purchaser to be required. *Provided*, that no article shall be considered a poison, within the meaning of this Act, unless such article be enumerated in Schedule A, annexed to this Act, or shall hereafter be declared a poison by law.

*Sect.* 14. The provisions of Section 13 shall not apply to articles to be exported, nor to any articles forming part of the ingredients of medicine compounded in accordance with the written prescription of a practitioner of medicine; but all prescriptions, whether or not composed in part of an ingredient or ingredients declared by this Act to be poisonous, must be carefully kept by the pharmacist on a file or in a book kept for that purpose only, and numbered in the order in which they are received or dispensed; and every box, bottle, vial, vessel, or packet containing medicine so dispensed, must be

labelled with the name and place of business of the Pharmacist so dispensing them, and be numbered with a number corresponding to that on the original prescription retained by the Pharmacist on his file or book, as aforesaid. Such prescription must be preserved at least five years, and shall be open to the inspection of the writers thereof, and a copy must be furnished by the pharmacist, if demanded by either the writer or purchaser, or both, for which copy or copies the pharmacist shall not exact any fee.

*Sect.* 15. From and after the passage of this Act, it shall be unlawful for the proprietor of any pharmaceutical shop to allow any person not a graduate or a practising assistant in pharmacy, to compound or dispense the prescriptions of physicians containing poisons, except as an aid under the immediate supervision of said proprietor, or a graduate, or a practising assistant in pharmacy.

*Sect.* 16. From and after the passage of this Act, all persons who shall knowingly, intentionally and fraudulently adulterate or cause to be mixed any foreign or inert substance with any drug or medical substance, or any compound medicinal preparation recognized by the pharmacopœia of the United States or of other countries as employed in medical practice, with the effect of weakening or destroying its medicinal power, or who shall sell the same otherwise than in the unbroken original package put up by the manufacturer and labelled with his name and address, or who shall sell such unbroken original package knowing the article contained therein to be thus adulterated, shall be guilty of a misdemeanor, and on conviction thereof before the Criminal Court shall forfeit all the articles so adulterated and shall pay a penalty not exceeding one thousand dollars, and in addition thereto may be sentenced to imprisonment not exceeding one year; said fine to be recovered and paid over to

*Sect.* 17. It shall be the duty of the Pharmaceutical Board of this State to appoint for such counties where the necessity therefor is deemed to exist, and subject to the approval of the Court of Quarter Sessions, one or more experts; and whenever a distinct charge or accusation is made, under oath or affirmation, before an Alderman or Justice of the Peace, that there is reasonable ground for believing that any dealer or manipulator of drugs, wholesale or retail, is guilty of any of the charges specified in Section 16 of this Act, such accusation to be substantiated by an examination or analysis of the alleged adulterated drug or preparation by said expert, together with a sample or samples of the articles examined or analyzed, the said Alderman or Justice of the Peace may issue authority to search for and arrest the sale of the adulterated articles until the case can be acted on by the grand jury, and, if a true bill be found, until the Court decides by competent testimony for or against the defendant.

*Sect.* 18. All other Acts and parts of Acts inconsistent with this Act are hereby repealed.

*Sect.* 19. This Act shall be known as the Pharmacy and Poison Act, 18 , and may always be so cited, described and spoken of.

## SCHEDULE A.

Aconite and its preparations.
Arsenic and its preparations.
Belladonna and its preparations.
Cantharides and the tincture.
Chloroform.
Cotton Root and its preparations.
Corrosive Sublimate.
Croton Oil.
Cyanide of Potassium.
Digitalis and its preparations.
Ergot and its preparations.
Henbane and its preparations.
Hydrocyanic Acid.
Nux Vomica and its preparations.
Opium and its preparations, paregoric excepted.
Oxalic Acid.
Poison Hemlock or Conium.
Savine.
Strychnia and all poisonous vegetable alkaloids and their salts.
Tartar Emetic.
Volatile Oil of Bitter Almonds, of Pennyroyal, of Savine, and of Tansy.
Proprietary or secret medicines recommended, sold or advertised as Emmenagogues and Parturients.

SCHEDULE B.

| DATE. | NAME. | PLACE OF BUSINESS. | QUALIFICATIONS. | REMARKS. |
|---|---|---|---|---|
| 1870. Jan. 10. | A. B. | 329 Broadway, N.Y. | In business within this State prior to the passage of the Pharmacy and Poison Act, 18 | |
| Jan. 11. | C. D. | Athens, Greene Co., N. Y. | Graduate in Pharmacy of Maryland College, of class 1862–63. | Died June 11, 1870. |
| Jan. 20. | E. F. | 280 Fulton Street, Brooklyn, N. Y. | Practising assistant in pharmacy, examined by Pharmaceutical Board of this State on day of 1870. | July 8, 1870. Removed to and carries on business on his own account at 48 John St. Ithaca, N. Y.; has passed examination of College of Pharmacy of the city of N. York, June, 1870. |
| Jan. 29. | G. H. | Middletown, N. Y. With A. B., city of New York. | Registered assistant in Pharmacy. Graduate of the Mass. College of Pharmacy, Class 1868–69. | September 1, 1870. Commenced business on his own account. 136 Lake Street, Buffalo, N.Y. |

SCHEDULE C.

*Declaration by a person applying to become Registered Pharmacist under the Pharmacy and Poison Act*, 18

To the Registrar of Pharmacists of the State of I, doing business (or about to commence business) at in the County of State of hereby declare, that I kept open shop for dispensing and compounding the prescriptions of medical practitioners at in the County of and State of on or before the day of 18 ; *or* am a graduate of the College of Pharmacy, Class 18 ; *or* am a graduate of the [foreign institution], my diploma having been acknowledged and endorsed by the Pharmaceutical Board of the State of on [date] ; *or* am a practising assistant in pharmacy, holding a certificate of qualification by the Pharmaceutical Board of this State, dated (as the case may be).

(Signed.) Name.

Dated this day of 186

*Affidavit.*

## SCHEDULE D.

*Declaration by a person applying to become Registered Assistant in Pharmacy.*

I, of hereby declare, that I am a graduate of the College of Pharmacy, Class 18 ; *or* am a graduate of the [foreign institution, date.] my diploma having been acknowledged and endorsed by the Pharmaceutical Board of the State of on the [date]; *or* am a practising assistant in pharmacy, holding a certificate of qualification by the Pharmaceutical Board of this State, dated ; and apply to be entered as registered assistant in pharmacy.

(Signed) Name,

Dated this day of , 18

*Affidavit.*

## SCHEDUDE E.

*Certificate of qualification to be issued by the Pharmaceutical Board to practising Assistants in Pharmacy.*

This certifies that of County of State of , has produced satisfactory evidence to the Pharmaceutical Board of the State of of having served not less than four years as an apprentice in a shop or shops where the prescriptions of medical practitioners were dispensed; has been properly examined by this Board, (appointed by the Governor, in conformity with Section 5 of the Pharmacy and Poison Act, 18 ) and on ballot, after such examination is declared, by a proper vote of this Board, to be competent to dispense poisons and compound medicines, subject to all legal restrictions. In testimony whereof the Officers of this Board have hereunto signed their names this day of 18

{SEAL}

## SCHEDULE F.

*Form in which registered pharmacists and retail dealers in poisons shall keep their poison-book.*

| Date. | Name of Purchaser. | Name and quantity of poison sold. | For what purpose said to be required. | Remarks. |
|---|---|---|---|---|
| | | | | |

## SCHEDULE G.

*Form of license to be issued to retailers of poisons in rural districts.*

I, , Registrar of Pharmacists, at the written request of of , County of , State of , and upon his written declaration that no registered pharmacist is situate within three miles of his place of business, have, in accordance with the provisions of Section 8 of the Pharmacy and Poison Act, 18 , and upon payment by him of one dollar, do hereby issue to him this license, authorizing him to retail poisons under the restrictions provided in said Act.

{SEAL}

(Signed) Name,
Registrar of Pharmacists
Of the State of
Office No. Street,
Town,
County.

Dated this day of , 18

SCHEDULE H.

*Form of Registrar's Certificate to be given a registered Pharmacist or registered practising Assistant in Pharmacy.*

This is to certify that of County of State of , was entered on the [date], at the office of the undersigned as *Registered Pharmacist* (*Registered Assistant in Pharmary*) in conformity with the Pharmacy and Poison Act of this State.

Given under my hand and seal, [town], this day of 18

{SEAL} (Signed) Name,

Registrar of Pharmacists.

# Editorial Department.

MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.—We have devoted more than usual space to the proceedings of this body, which are of much interest, and, though much more meagre than the official report yet to be published, will be found to embrace most of the leading points of the meeting. The membership was largely increased, and the attendance larger than usual. The Chicago members were exceedingly attentive, and rendered the stay of members very pleasant. Among other attractions was an exhibition of microscopes at the Academy of Sciences. This was a rare treat; about fifty instruments of all grades and kinds were well supplied with objects, and members attended to exhibit and explain them when needed. The amount of labor involved in the preparation of the objects exhibited was very great, and many of the visitors doubtless did not appreciate this, yet all seemed gratified. The gas was arranged in an admirable way, giving abundant light in the right place. Organic structure of various kinds, diatoms, and portions of living flowers, were included in the specimens. On Friday afternoon a steamboat excursion on Lake Michigan was taken, which gave the visitors an opportunity to see that fine body of water and the city front. On Thursday morning the members met at Dearborn Park, to enable Mr. John Carbutt to take a photographic group of the members.

EXHIBITION OF CHEMICALS AND PHARMACEUTICALS COINCIDENT WITH THE CHICAGO MEETING.—The exhibition of specimens, apparatus, etc., at the 17th Annual Meeting of the American Pharmaceutical Association, was one of the most attractive features of the occasion, and reflects great credit on Mr. James W. Mill, Chairman of the Local Committee having it in charge, as well as upon the Local Secretary, H. W. Fuller.

The exhibition was held in a hall adjoining that in which the Association met and very well adapted to the purpose. It consisted of crude drugs, chemicals, pharmaceutical preparations, glassware and apparatus.

CRUDE DRUGS.—Drugs constituted a new and decidedly important fea-

ture of the Exhibition, including a number of collections from abroad, among which that of Messrs. *Gehe & Co.*, of Dresden, Saxony, was the most interesting, both for the rarity of the specimens and their variety. Their collection included vegetable and chemical drugs, essential oils, fixed oils, powders, extracts and "concised drugs," a class of preparations unknown here, in which aromatic woods and roots are mechanically cut into square and globular pieces of small size, each being about a dose—such as rhubarb, sassafras, liquorice, orris, marshmallow, calamus, etc. Among the essential oils were those of sandal wood, calamus, patchouli, matico, ginger root, coriander, mustard and others. Croton oil extracted by benzine oil was a speciality among the fixed oils.

Among the organic principles we noticed several alkaloids, koussin, digitalin, jalapin, caffein, cantharidin, etc.

*McKesson & Robbins*, of New York, had a very excellent collection of crude drugs, well selected, comprehensive, valuable, and thoroughly well exhibited, which has much to do with the effect of such specimens on the visitors.

Other exhibitors were Messrs. *Neergaard*, of New York, *Henshaw & Brigham*, of Boston, *Hurlbutt & Edsell*, of Chicago, P. W. Bedford, W. H. Schieffelin & Co., Dodge & Alcott, and Dr. E. R. Squibb, of New York. American Medical herbs, etc., were exhibited by W. S. Merrell & Co., of Cincinnati, Messrs. Wilson, of Boston, W. H. Peck & Co., N. York, and Martin Hastings, Waukegan, Ill.

Chemicals were well represented. As usual, the most brilliant display was made by *Powers & Weightman*, of Philadelphia, whose collection included 220 specimens, some of which were of great value and size; the opium and cinchona alkaloids were splendidly illustrated, and general chemicals, liquid and solid very thoroughly represented.

*G. Mallinckrodt & Co.*, of St. Louis, came next in the variety and beauty of their display, especially in liquid chemicals. *Rosengarten & Sons*, were represented by a small but excellent collection of chemical products. *L. Martin & Co.*, of Philadelphia, exhibited a very creditable collection of general chemicals, including several alkaloidal preparations. *Etienne, Rogers & Co.*, of Paris, had a collection of chemicals, camphor, etc. *Mahla & Chapall*, of Chicago, exhibited various important liquid chemicals, including acids, ammoniacal and ethereal preparations, and some saline compounds. Glycerin was exhibited by *Henry Bower*, of Philadelphia, *W. J. M. Jordon & Hartman, Laist & Co.*, of Cincinnati, and *F. Surg.* of Vienna. Chemicals were also shown by Messrs. Stein, Hirsh & Co, Henry G. D'Evers and C. G. Wheeler, of Chicago, and Messrs. *Feutchwanger*, of New York.

Pharmaceutical Preparations were numerously represented by fluid extracts, sugar-coated pills, and granules, plasters, capsules, resinoids, powders, fruit juices, granulated salts, extracts of beef, cod-liver oil,

flavoring extracts and native wines. The larger collections were by Messrs. *Bullock & Crenshaw, Hance Brothers & White, Mellor & Rittenhouse* and *W. R. Warner & Co.*, of Philadelphia, *Henry Thayer & Co.*, of Cambridge, Mass., *W. S. Merrell & Co.*, of Cincinnati, *Garrison & Murray*, of Chicago, and *Perkins, Sterns & Co.*, of New York. Smaller displays were made by *S. Mason McCollin, A. B. Taylor, B. J. Crew*, and *E. Parrish*, of Philadelphia; *E. H. Sargent, H. A. Stone & Co.*, and Tourtelet Bros., of Chicago; *J. William & Sons* and *Adolphus Glanz*, of New York, and Dr. *Wm. B. Chapman*, of Cincinnati.

Collections of Chemical and Pharmaceutical Apparatus were exhibited by Henry Biroth, of Chicago, Bullock & Crenshaw and Edward Parrish, of Philadelphia. Small collections and specialities of apparatus, surgical instruments, etc., were two numerous for our space. Druggists glassware was well represented in the collections of *B. H. Sleeper & Co.*, of Philadelphia, and the *New England Glass Company*. Druggists' sundries were chiefly represented by *S. Maw & Sons*, of London, and *Fuller, Finch & Fuller*, of Chicago, whose articles were numerous and excellent. The department of books and paints and colors our space prevents us to notice, though represented by several exhibitors.

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British Pharmaceutical Conference.—This body met at Exeter on 17th and 18th of August. The President, Daniel Hanbury, F.R.S., occupied the chair. About 110 new members were elected. The report of the Executive Committee states the membership to be 647. The treasury has $400 in excess of expenditures. The Committee recommend the publication annually of a "report on the Progress of Pharmacy," a year book on the plan of our Report. The President's inaugural address is a paper of much interest, and is directed to subjects of interest to pharmaceutists. The present state of cinchona culture in India is noticed, and especially the process called *mossing*, by which portions of the stem from which bark has been stripped, become re-covered with bark by covering the part with moss, and, strange to say, this new bark is found to contain a larger percentage of alkaloids than that which preceded it. The important papers of Lefort, on Ipecac, Schoonbroodt, of Leige, on the effects of drying on plants, are noticed, and other items of information on the progress of pharmacy during the year. Papers read on the first day were on Pharmaceutical Responsibilities and Remuneration, by Edward Smith, of Torquay. Syrup of Iodide of Iron, by M. Carteighe; on Distillates by Joseph Ince; on Lard and its preparations for use in Pharmacy, by Wm. Smith; the application of spectral analysis to Pharmacy, by W. W. Stoddart, F. C. S.; &c. Syrup of Phosphate of Iron, by T. B. Groves, F.C.S.; the Assay of Ipecacuanha, by Prof. Attfield. The papers read on the second day were on Pharmaceutical Education, by W. Schacht; Contributions to the History of Buxin, by Dr. Flückiger; on Tincture of Acetate of Iron, by Messrs. Deane & Jeffer-

son; on the prevention of Accidental Poisoning, by Mr. G. Bunell; on Chloral as an Anæsthetic, by Mr. Hanbury; on Pill Excipients, by W. D. Savage; Historical Notices of Chemists and Druggists, by the same; rare Essential Oils, by Mr. Hanbury; Carbolic Acid and Human Parasites, by T. A. Redwin; on Donovan's Solution, by W. E. Heathfield; on the detection of Fixed Oils in Plants, by Mr. T. T. P. Bruce Warren, on the depuration of Ammoniacal Salts for Pharmacy, by Wentworth Lacelles Scott; on Chlorinated Lime, by the same; on Sulphurous Acid, by the same, and on the Commercial Powder of Cinchona and Ginger, by the same.

On August 19th a complimentary dinner was given by the Chemists of Exeter, and on the 20th an excursion to Torquay, was made and enjoyed.

The final meeting was held on Monday, August 24th, when it was decided to meet in Liverpool, in 1870. A ballot for officers for 1869–70 was then held, which resulted in the election of W. W. Stoddart, of Bristol, *for President;* J. Abraham, of Liverpool, H. C. Baildon, Edinburg, H. S. Evans and Joseph Ince, of London, *for Vice Presidents;* Mr. Brady, of New Castle, *Treasurer;* Prof. Attfield and Mr. Reynolds, *General Secretaries;* E. Davies and J. Dutton, *Local Secretaries,* and a *Committee* of 9 members.

On the whole, the Exeter meeting shows a continued advance in the spirit and earnestness of the British Conference.

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The Third International Pharmaceutical Congress.—We learn through the *Pharmaceut. Zeitung,* No. 74, 75, 76, 1869, that this convention was held in Vienna on the 9th and 10th of September, in the Aula of the Imperial Academy of Sciences. Most of the delegates had arrived the previous evening, and were received by the Local Committee in the parlor of the Hotel Ross.

The first session commenced Sept. 9, at 9 o'clock A. M.; 160 pharmaceutists present. Mr. Beckert, President of the Austrian Apothecaries' Association, called the meeting to order, welcomed the delegates, and urged the importance of the questions to be discussed. A Committee on Credentials reported 33 delegates, viz.:—From America and Italy each *one,* England *two,* France and Russia each *three,* North German Apothecaries Association *seven,* from the South German Apothecaries Association *three,* from Austria *ten,* from the Vienna Assistants' Association *two,* and Swiss International Pharmaceutical Association *one.* Among the delegates were Messrs. Redwood and Evans, of London, Faber, of New York, Mosca, of Turin, Robinet and Mialhe, of Paris, Von Trapp and Bjoerklund, of St. Petersburg, Danckwortt, of Magdeburg, Dittrich, of Prague, Von Waldheim and Klinger, of Vienna, and many others. Four German Pharmaceutical Journals had reporters present. The election resulted in the following officers:—Danckwortt *President,* Robinet and Von Trapp *Vice-Presidents,* Messrs. Klinger, Lehman and Vorwerck

*Secretaries*, Von Waldheim and Dittrich *Interpreters*. The officers then took their seats, and the discussion of the questions commenced (see page 374 of the July number) with the first—on the advisability of independent schools of Pharmacy. M. Schiffner regarded this reform as indispensable for progress. M. Georgino explained the course at the Ecole de Pharmacie, at Paris, which lasts three years, and both he and Robinet advocated such schools. Von Trap spoke in the affirmative. Schlosser in favor of such schools connected with, but as a distinct branch, of the University, so that the apothecary will not have to receive his teaching from the medical stand-point. Von Trapp insisted that the teachers should be apothecaries, or such as understand and can teach pharmacy to advantage. To the pure chemist all bodies are alike and apothecaries become scientific but not practical. Faber explained the courses in the American Colleges of Pharmacy, and advocated the separation of Pharmaceutical from Medical instruction. Reimann stated that North Germany was in favor of letting the apothecary get his knowledge where and how he pleased so he could pass the examination. The discussion was continued by Messrs. Wolfrom, Schiffner, Redwood, Mosca and Mirus, nearly all agreeing in the necessity of having pharmaceutists as teachers, when the following answer was adopted, viz.:—*The establishment of pharmaceutical schools as separate branches of the universities, and with the appointment of apothecaries for all purely pharmaceutical branches is as much in the interest of the public as in that of pharmacy.*

The *second* question, relative to the creation of "syndic chambers" (or "boards" of apothecaries to be elected annually) from each district, to manage affairs between the authorities and the apothecaries by arbitration, was decided *affirmatively*.

The *third* query, reported on by Reimann, whether the supremacy exercised by physicians over pharmaceutical affairs is useful to the state, the public, and the apothecaries, was decided unanimously in the *negative*.

The extensive range of medical studies prevents the physician from understanding pharmacy practically, and he is not a proper judge of its requirements. In consequence, despite the existing laws, the medical control has become in a great measure nominal; and to look upon pharmacy as an appendage to medicine is an antiquated idea. The committee recommend a mixed board of physicians and apothecaries, presided over by a lawyer.

The *fourth* query, relative to a universal Pharmacopœia, was not practically acted upon; M. Waldheim, however, stated that the Société de Pharmacie had compiled a small codex, bringing about 100 of the stronger preparations of nearly all Pharmacopœias into a parallel relation, so that their nomenclature, composition and synonyms may be examined with readiness; and he advised that copies should be sent to all pharmaceutical societies.

The *fifth* query, relative to assaying organic alkaloids, was referred to the next Congress and not acted upon.

It was then determined to communicate the action of the Congress to the several governments. The time and place of the next meeting was then discussed, and, after determining to extend the interval, it was decided to meet in St. Petersburgh in 1872.

The Vienna apothecaries entertained the Congress handsomely at a supper on the 9th, and on the third day a free excursion via Mount Semmering to Murzzuschlag and return was enjoyed by the visiting members of the Congress.

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The International Medical Congress met at Florence, Italy, on the 23d of September, at 9 o'clock A. M., in the beautiful Hall of the Ministry of Education, which was decorated with the flags of all nations. M. Bargone, the Educational Minister of State, welcomed the members (200) and hoped their discussions would tend to alleviate the ills of humanity. Salvatore de Renzi, of Naples, presided.

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Pharmacy in California.—Our September number contained an account of a preliminary meeting of druggists in San Francisco, Cal., to organize a society. Since then an organization has been effected under the name of the California Pharmaceutical Society, and temporary officers appointed; the permanent officers were to have been elected on the 11th of October, the time fixed for the annual meeting. The intent is to embrace the Pharmaceutists of all California who are friendly to the aims of the Society, which are embodied in Article I, of the Constitution, and which embrace improvement in educational means, the encouragment of home production and manufactures, the establishment of proper ethical relations between pharmaceutists and physicians, the culture of general science and the proper education and training of the rising generation of apothecaries. Such excellent objects must receive the good wishes of all. We hope our California friends will keep us informed of their progress.

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Annual International Art Exhibitions at London.—The Commissioners of the Exhibition of 1851 announces the first of a series of Annual International Exhibitions of selected works of fine and industrial art, will be opened at South Kensington, in London, on Monday, May 1, 1871, and close Sept. 30th, 1871. Permanent buildings are about to be erected for the purpose, near the Royal Agricultural Gardens, and one-third of the entire space will be given to foreign exhibitors. Only objects of a certain degree of merit will be admitted. The objects are classed, 1st, *fine arts*, 2d, *scientific inventions and discoveries of all kinds*, 3d, *manufactures*, 4th, *horticulture*, the latter being held by the Royal Horticultural Society. The programme in detail will be found in the *Journal of the Society of Arts*.

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Professional Changes.—Prof. Strecker, of Tübingen, has been called to Würzburg, to replace Prof. Scherer, deceased, and Dr. Engleman, of Giessen, has gone to Bonn.

University of Michigan School of Pharmacy.—In our September number was a notice of the graduating class of this School, in which we ventured to doubt the propriety of giving the diploma of "Pharmaceutical Chemist" to students of the school if they had not had shop practice. In a letter since received from Dr. A. B. Prescott, the assistant of Prof. Douglass, he says "No requirement of training in the shop is made; either for admission to the course or for graduation. Our school believes it to be quite as well for the young pharmacist, better for his employer, and far better for the public that scientific preparation for the drug business should *precede* experience in it. Some students enter our course after several years of shop experience; in consequence, they have advantage in the College of greater eagerness. Others graduate to engage for the first in a drug store; they have thereby the advantage in their vocation of a more enlightened experience. The course now established here embraces training, under supervision, at the prescription stand—actual work—certainly as well deserving the credit of responsible experience for the pharmaceutical student, as hospital practice does for the medical student." This is all well enough as regards the preparation of the student for his pharmaceutical duties, but to give a diploma to a student intimating that he is a pharmaceutical chemist, which means an apothecary or pharmaceutist, when he has no practical familiarity with drugs and with shop experience, is not right. The point of the matter is whether the latter class leave the University and offer themselves as qualified clerks, or whether they enter as beginners? In any case the school authorities should adopt some other title for their diploma given to such, and not that which in the most thoroughly practical English Pharmaceutical School is given by act of Parliament only to accomplished pharmaceutists. (See advertisement sheet.)

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*A course of Practical Chemistry arranged for the use of Medical Students*, by William Odling, M. B., F.R.S., Fellow of the College of Physicians, with illustrations, from the fourth and revised London edition. Philadelphia. Henry C. Lea, 1869; pp. 261, octavo.

This little work is intended to teach the student practical chemistry, and is divided into four chapters. The first treats of chemical reactions and chemical manipulation; the second of analysis; the third of toxicological chemistry, noticing the detection of the principal mineral and vegetable poisons; whilst the last part is devoted to animal chemistry, chiefly of the urine, normal and abnormal, and of calculi and the blood, and the concluding section treating of bile, milk and bone.

The author has been able to express his meaning clearly, whilst omitting all unnecessary descriptions of substances and processes, confining his lessons to the limits fixed by himself. The short range of subjects for analysis specially interesting to the medical student has shortened the labor of the author, whilst sufficient of the details of analysis are given in

Chapter 2d, to help the student in case he wishes to extend his researches into the domain of general chemistry.

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*Half Yearly Compendium of Medical Science.* A synopsis of the American and Foreign literature of medicine, surgery, and the collateral sciences, for six months. Edited by S. W. Butler, M. D., and D. G. Brinton, M.D. Part iv. July, 1869. Philadelphia; pp. 323.

Though rather behind the usual time of publication, the Compendium comes laden with valuable information, gathered from the Journals, and classified for easy reference by the physician. To those who do not subscribe extensively to medical journals, the Compendium will afford a harvest of recorded observations in practical medicine.

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*The Physician's Visiting List for* 1870, nineteenth year of its publication. Philadelphia. Lindsay & Blakiston.

Physicians are informed that the "Visiting List," now become an established help to the practitioner, is ready.

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## OBITUARY.

Professor Thomas Graham, Master of the Mint, died on the 17th of September, at London, in his 64th year, having been born in Glasgow on the 21st of December, 1805. His education commenced in Glasgow, was concluded in Edinburg. He lectured for several years on chemistry in his native city, at the Andersonian Institution. In 1847 he succeeded Dr. Edward Turner, at University College, London, and he continued to hold this appointment until 1855, when he was appointed Master of the Mint in place of Sir John F. W. Herschel, resigned. Prof. Graham took an active part in the establishment of the Chemical Society of London in 1840, and the Cavendish Society in 1846, being president of the latter. Prof. Graham was made a fellow of the Royal Society in 1836, and a correspondent of the French Institute in 1848, and received the Copley Medal for his chemical discoveries, (*Pharm. Journ*). He is best known in this country through his excellent "elements of chemistry," which passed through several editions. His recent experiments and speculations concerning hydrogenium exhibit an undiminished intellectual power, the loss of which to chemical science all must regret.

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Peter Mark Roget, M. D., author of one of the Bridgewater treatises on Animal and Vegetable Physiology, died recently in London, at the advanced age of 90 years. He was a fellow of the Royal College of Physicians, and formerly a Professor of Physiology at the Royal College.

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